

IS THE MANUFACTURING SECTOR AN ENGINE OF GROWTH IN SOUTH AFRICA?
AN ANALYSIS OF THE EASTERN CAPE.

by

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submitted to the

Faculty of Management

in accordance with the requirements of the degree

Master of Commerce (MCom)

in the

Department of Economics

at

Vista University

Promotor: Prof. R.R. Mears

2000

Port Elizabeth

17 MAY 2000



ACKNOWLEDGEMENTS

My special thanks to God, my provider, for the strength, support and hope given to complete this study.

I am thankful to my promotor, Prof. R. R. Mears for his understanding, patience, advice, ability to cheer, time and assistance. I realize how fortunate I have been between 1998 and 1999. His interest and encouragement were far greater than any mountain made of gold. Sincere thanks to Prof. T. Fényes, Head of Vista's Economics Department for his listening ear and helping hand.

Many thanks to everyone who assisted me. I would like to thank the following for their valuable contribution and efforts: Makhosazana Sithole of Statistics South Africa, David Viljoen of the DBSA, Reuben Masango, Carol York for editing the document and Elizabeth King, who I nicknamed Liziwe, for assisting with graphs.

Special thanks go to my loving and special husband, Mawabo, my sister Noxolo and my child, Masive for their patience and sacrifice over the years. This thesis is dedicated to them and the Ramncwana family, namely, the late Nzima, Nozipho, Bulelwa, Tobeka, the late Zodwa, Gquma, Msingathi, Nomkhuseli, Nomhizana and my brother Pumezo.

I would like to thank Vista University for financial support. Many thanks to the Vista University Port Elizabeth campus library staff for their assistance. Without the University's support, this study would be incomplete.

PORT ELIZABETH

JANUARY 2000

NOLUNTU DYUBHELE

DECLARATION

I declare that

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is my own work, that sources used have been indicated by means of references, and that this thesis has not previously been submitted by me for a degree at another university.

NOLUNTU STELLA DYUBHELE

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SUMMARY

In this thesis the manufacturing sector is assumed to be an engine of growth in South Africa, specifically in the Eastern Cape. The nature of the study is set out in Chapter 1. Its importance in the future economic growth and development of South Africa and the Eastern Cape is stressed by the various theories that are discussed in Chapter 2. Chapters 3 and 4 survey general evidence on the manufacturing industry in South Africa and the Eastern Cape. The manufacturing industry in South Africa and the Eastern Cape is at present passing through a difficult period of reorientation and reassessment. Its very success in industrial expansion has created problems. Chapter 5 analyses the problems encountered by the manufacturing industry, both in South Africa and the Eastern Cape. Finally, a summary of the main findings and recommendations on the study are outlined in Chapter 6.

The manufacturing industry in South Africa began with the production of certain products for the mining industry. Furthermore, consumer goods were produced for the small and protected home market. The manufacturing sector has been performing below its potential since the early 1990s. This has inhibited growth, employment and development. Since the late 1990s, the

manufacturing industry has been on the road to recovery. It is universally acknowledged that the manufacturing industry has to face international competition in order to strengthen its role as the leading sector.

South Africa and the Eastern Cape have to achieve a satisfactory growth rate in total output and employment. This is mainly due to the pressure of a rapidly growing population, a large part of which has a relatively low standard of living. The manufacturing industry, however, is regarded as the key to growth in an economy. This is mainly because of the limited development opportunities in agriculture and mining, and the unsustainable nature of service sector. In fact, the manufacturing industry is closely integrated with the primary sector and the service sector.

Employment is one of the indicators of the size and importance of manufacturing. The declining share of employment in manufacturing is a world-wide problem. This problem cannot be easily solved. The service sector has not solved the employment problem. Empirical evidence shows that economies which can generate wealth from manufacturing and have innovative manufacturing activities, increase their chances of creating more employment opportunities. Hence, the manufacturing sector is estimated to be an engine of growth even in South Africa and the Eastern Cape.

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LIST OF ABBREVIATIONS

CEAS	Central Economic Advisory Service
CIMEC	Centre for Investment and Marketing for the Eastern Cape
CIS	Commonwealth of Independent States
CSBP	Centre for Small Business Promotion
DBSA	Development Bank of Southern Africa
E.G.Kei	East Griqualand Kei
EU	European Union
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Product
GEAR	Growth, Employment and Redistribution Strategy
GEIS	General Export Incentive Scheme
GGP	Gross Geographic Product
IDC	Industrial Development Corporation
IDPR	Institute for Development Planning and Research
IDZ	Industrial Development Zone
ILO	International Labour Organisation
IMF	International Monetary Fund
MAC	Manufacturing Advisory Centre
MIDP	Motor Industry Development Programme
NIC	Newly Industrialised Countries
NPI	National Productivity Institute
NQF	National Qualifications Framework
NSI	National System of Innovation
OECD	Organization of Economic Co-operation and Development
OHS	October Household Survey
OSTMP	Outward Selling Trade Mission Programme

PERCCI	Port Elizabeth Regional Chamber of Commerce & Industry
RDAC	Regional Development Advisory Committee
RDP	Reconstruction and Development Programme
RIDP	Regional Industrial Development Programme
SACU	South African Customs Union
SAQA	South African Qualifications Authority
SARB	South African Reserve Bank
SDI	Spatial Development Initiative
SIC	Standard Industrial Classification
SMME	Small, Medium & Micro-Enterprises
SPII	Support Programme for Industrial Innovation
SSA	Statistics South Africa
THRIP	Technology and Human Resources for Industry Programme
WTO	World Trade Organisation

GLOSSARY

This glossary covers most of the major concepts in the study.

Agricultural sector	The portion of the economy that is comprised of agriculture, forestry, hunting, and fishing.
Appropriate technology	Technology that is appropriate for existing factor endowments. For example, a technology that employs more labour relative to other factors in a labour-abundant economy is more appropriate than one that uses less labour.
Backward linkage	The use of inputs from other industries by an industry.
Capital accumulation	Increasing the country's net investment in fixed assets.
Capital-intensive production	A process of production that uses more capital relative to labour.
Capital stock	The amount of physical goods existing at a particular time that have been produced for use in the production of other goods.
Comparative advantage	The ability to produce a good or provide a service at a lower opportunity cost than the trading partner.
Competitive advantage	The ability to produce a good or provide a service with less resources than the trading partner.
Constant returns to scale	A proportional change in inputs that yields an equally proportional

change in output.

Customs Union	A free trade area with common trade barriers against nonmember countries.
Developed countries	Those high-income countries with advanced industrial economies such as Japan and the United States.
Development	The process of improving the quality of life of all human beings.
Economic growth	The process by which the productive capacity of the economy is increased overtime to bring about increasing levels of national income.
Economic overhead capital	Infrastructure such as roads, railways and water.
Economies of scale	A decrease in the long-run average cost of production as output is increased, due to the gains in efficiency from division of labour or the substitution of capital for labour.
Employed	Individuals in the labour force who are working.
Endogenous growth	Growth generated by factors within the production process such as increasing returns.
Exogenous growth	Growth generated by factors outside the production process such as increases in population.
Factors of production	Inputs or resources required to produce a good or service.

Formal sector	Production activities within the framework of organized markets and legally prescribed types of enterprises.
Forward linkages	Supply of inputs by one industry to another industry.
Gross domestic product	The total output of goods and services produced by the country's economy within the country.
Gross geographic product	The total value of all final goods and services produced within a geographically demarcated area.
Human capital	Investments embodied in human persons such as skills, abilities and training programs.
Human resources	One of the factors of production used to produce goods and services to satisfy wants namely, labour.
Increasing returns to scale	A disproportionate increase in output that results from changes in the scale of production.
Industrial policies	Policies to encourage industrial investment and greater industrial efficiency.
Informal sector	That part of economic activity that is not recorded in a country's national accounts.
Infrastructure	All services which are essential to production, but which are indirectly part of the production process.

Import substitution	A policy to replace imports with goods produced locally.
Industrialization	The process of encouraging the country to process raw materials and manufacture goods for consumption or further production.
Labour force	The economically active population, including the unemployed, but excluding students and housewives.
Labour-intensive	The method of production that uses more labour relative to other factors of production.
Labour productivity	The level of output per unit of labour input.
Less developed countries	These include the low and middle-income countries of Africa, Asia, Latin America and the Middle East.
Literacy rate	The percentage of the population of age 15 and over that are able to read and write.
Manufacturing industry	Industry that transforms intermediate goods and raw materials into new products in order to make them more valuable.
Multi-factor productivity	The total monetary value of factors of production in an economy.
Newly industrializing countries	A small group of countries with a dynamic industrial sector.
Overvalued currency	A nation's monetary unit that exchanges for more units of a foreign currency than would occur at a market equilibrium rate.

Physical capital	Tangible investment goods such as machinery and plant and equipment.
Primary sector	The part of the economy that specializes in the production of agricultural products and the extraction of raw materials. For example, agriculture and mining.
Private sector/authority	The part of an economy whose activities are under the direction and control of non-governmental economic units such as firms.
Productivity	The relationship between the quantity of goods produced and the quantity of inputs used to produce the goods.
Public sector/authority	The part of an economy whose activities are under the direction and control of the state.
Secondary sector	The manufacturing part of the economy that uses raw materials from the primary sector to produce goods.
Social overhead capital	Infrastructure such as school and libraries.
Sustainable development	A development in which the needs of the present generation are met without compromising the ability to meet the needs of future generations.
Take-off	The stage in Rostow's model in which accelerated capital and rapid structural changes force the economy into sustained economic growth.

Technology	The stock of knowledge applicable to the production of goods and services.
Tertiary sector	The services and commerce portion of the economy.
Unemployed	Individuals in the labour force who are looking for work but unable to find it.
Unemployment	The situation of individuals without work but seeking work.
Unit labour costs	The labour cost per unit of output, equal to the ratio of the average cost of labour to the average product of labour.
Unskilled labour	Workers who have no training

CHAPTER 1

THE PROBLEM AND ITS SETTING

1.1 INTRODUCTION

The manufacturing sector serves as the engine of growth in an economy (Colman & Nixon 1994:280; Schrire 1992:446; Thirlwall 1994:59). The main characteristic of economic growth analysis by economists and others, is the almost unqualified belief in the primary importance of the manufacturing sector (Cohen & Zysman 1987:1). The manufacturing sector shows the fastest growth, both in the volume of output and the productivity of labour. Therefore, economic planners and decision-makers give priority and preference to the development of the manufacturing sector in order to stimulate economic growth and development in an economy.

Economic development consists of changes in the structure of an economy that are required for growth (Hess & Ross 1997:387). These changes include production and employment elements. Economic growth refers to the annual rate of increase in total production in the economy (Fourie, Mohr & Associates 1995:643). Furthermore, it is one of the components of economic development. According to the African National Congress (ANC) (1997:58), the manufacturing industry is the key generator of resources for further economic development through the generation of technological change, industry-related services and promotion of linkages. It possesses growth stimulating characteristics which other sectors of the economy do not possess to the same extent (Thirlwall 1994:60). Growth in the manufacturing sector is, therefore, advantageous for growth of the Gross Domestic Product (GDP) of a country, the per capita income, employment creation and trade.

Historically, the manufacturing sector has accounted for an increasing share of employment (Hayter 1997:69). Moreover, it is estimated to be playing a larger role than the primary or tertiary

sectors. Income growth increases the need for manufactured goods (Hess & Ross 1997:389). Therefore, many countries consider the growth of the manufacturing sector as an indicator of economic development. The manufacturing sector in South Africa and the Eastern Cape is not performing well due to many reasons. It is faced with declining levels of employment. The fact that South African products are not internationally competitive, and that the country has become an unreliable supplier to world markets, is reflective of the situation in the South African labour market mainly caused its active engagement in labour disputes and strike activity. The main reason why the Eastern Cape province is regarded as the second poorest region in the country is mainly attributed to the fact that its manufacturing sector only contributes 7,5 per cent towards the country's total manufacturing output (Driver 1998:789).

The challenge to the manufacturing sector in South Africa and the Eastern Cape is to create employment opportunities. This requires the improvement of key areas such as infrastructure, health, industrial investment, appropriate technology, SMME's and human resource development (IDC 1995a:41). This is mainly because empirical evidence shows that manufacturing activity, even in the newly industrialised and fastest growing East Asian economies, depends on these key areas.

1.2 THE NATURE OF THE PROBLEM

The major problem encountered in the study was obtaining statistical data on the manufacturing industry in South Africa and the Eastern Cape. A central question in economic development is the extent to which statistical data is reliable. This is mainly because complete statistical data has been limited or unavailable in many developing countries (Klasen & Wooldrad 1999:3). For example, the International Labour Organisation (ILO) criticizes the very sources of information, namely the SSA employment data and the October Household Survey (OHS). The ILO argues that employment levels are often underestimated, new firms are omitted and there is a response bias in manufacturing surveys (Klasen & Wooldrad 1999:6). Moreover, new firms are considered to be showing faster rates of employment than old ones and their exclusion means the exclusion of

employment creation. In addition, rural areas are undercounted.

Whilst statistical data is available on South Africa as a whole, limited or outdated data is available for the provinces, specifically the Eastern Cape. For example, it was difficult to estimate the GGP of the province. This was mainly due to the fact that limited records are kept of transactions in the province. Moreover, data is available for the developed urban areas rather than the developing rural areas.

The manufacturing sector in South Africa and the Eastern Cape was more successful in creating employment opportunities for white workers in the past. This industry has to create employment for the whole population, especially the poor of South Africa and the Eastern Cape. This has to be done in order to improve the quality of life of the entire population.

1.3 OBJECTIVES OF THE STUDY

The main objective of this study is to obtain a clearer understanding of the topic. This study aims to obtain a better understanding of manufacturing and its effects on the South African economy. The main focus is to establish whether the manufacturing sector succeeds in playing the role of securing economic growth, employment and development in South Africa, specifically in the Eastern Cape.

The focus is on the Eastern Cape in particular, because of the low levels of socio-economic development, low economic growth and high unemployment rates prevailing in the province. Notwithstanding the fact that a fairly well developed manufacturing structure exists in metropolises such as Port Elizabeth, Uitenhage and East London, the author endeavours to investigate the main reasons why the manufacturing sector fails to be the engine of economic growth and job creation in the South African and Eastern Cape economies (Horn, Levin & Lloyd 1995:58).

1.3.1 Secondary objectives

The following secondary objectives have been identified in this study:

- (a) The study exposes the economic situation in South Africa in general and the Eastern Cape province in particular. The aim is to identify the infrastructural development necessary to establish a strong and buoyant manufacturing sector in the Eastern Cape province.
- (b) The study investigates possible investment opportunities and the role of the manufacturing sector in job creation opportunities.
- (c) The study analyses the strengths, weaknesses, opportunities of and threats to the manufacturing industry in the Eastern Cape.

1.4 REASONS FOR THE RESEARCH

The study investigates possible investment opportunities and their role in the creation of job opportunities in the Eastern Cape. According to Joffe, Kaplan, Kaplinsky & Lewis (1995:17), a more productive manufacturing sector creates jobs elsewhere in the economy.

The study further investigates the readiness of the Eastern Cape, in terms of infrastructural development, to support the manufacturing sector. Information is provided on the current infrastructure and the requirements which are necessary for a strong manufacturing industry to develop. Furthermore, this study shows that the manufacturing industry contributes to the development of related industries in the province, for example tourism.

1.5 METHODS OF RESEARCH

A comprehensive literature study was undertaken to provide a basic framework and conceptualisation of the manufacturing sector. In order to obtain the necessary literature, the secondary sources of information were used in the study. The secondary sources of information used in this study consist of information from journals and books obtained mainly from the libraries of Vista University (Port Elizabeth campus), the University of Port Elizabeth, as well as inter-library loans. Statistical data was obtained from the Development Bank of Southern Africa, Department of Trade and Industry, Statistics South Africa, Industrial Development Corporation, National Productivity Institute, South African Reserve Bank quarterly bulletins and the Employment Research Unit at Vista University.

The methodology of the research consists of three steps, namely, the formulation of a hypothesis, the analysis of the data and tables to test the hypothesis and the conclusion drawn on the findings. These conclusions are expected to give some light on the hypothesis to be investigated.

1.6 DIVISION OF CHAPTERS

The study is divided into six chapters. **Chapter 1** includes the introduction, the nature of the problem and its setting, an outline of the main and secondary objectives of the study, the reasons for the research and a description of the sources used.

An overview of the different theories outlining the importance of the manufacturing industry is the subject of **Chapter 2**. Various theorists attach importance to this industry mainly because it has the ability to contribute more to economic growth, creation of jobs and development. These theorists argue that countries and regions industrialise at different stages of development. This is mainly because industrialization depends on the condition in specific economies. Furthermore, the pace of industrialization in developing countries is limited by factors such as the lack of know-how and capital. Investment is significant for economic growth, whether it be in human, social or

physical capital.

Chapter 3 analyses the manufacturing sector in South Africa. This involves investigating issues such as the existing and required infrastructure, as well as the contribution of the manufacturing sector as far as employment, investment, productivity, trade and GDP is concerned.

Chapter 4 gives a detailed outline of the manufacturing sector in the Eastern Cape. This involves investigating issues such as the infrastructure in place, the current job creation situation, production, the region's investment attractions and the role of the manufacturing industry in the province. The central government's Reconstruction and Development Programme (RDP) and Growth, Employment and Redistribution (GEAR) strategies are also analysed.

Problems encountered by the manufacturing sector, both in South Africa and in the Eastern Cape province, are identified and discussed in **Chapter 5**. These problems include the declining employment, low production, low productivity and poor socio-economic conditions.

Chapter 6 presents a summary of the most important findings of the study. Recommendations and suggestions for future studies are outlined in this chapter.

1.7 BACKGROUND TO THE EASTERN CAPE

The Eastern Cape is one of the nine provinces in South Africa. It has had the difficult task of reconstruction. This was mainly because it had to incorporate the underdeveloped areas of the former Ciskei and Transkei with the well serviced areas of the cities in the former Cape Province and Border. There are still problems in defining the regions. For example, Umzimkhulu is part of the East Griqualand-Kei (E.G.Kei) region but lies between Kwazulu-Natal and Kokstad. The Eastern Cape is divided into five regions, namely, Western, Central, Northern, Eastern and E.G.Kei regions (Ministry of Economic Affairs 1995:5).

The Eastern Cape has 16 industrial districts which combine several of the magisterial districts. Firstly, the Western region consists of the Port Elizabeth, Uitenhage, Humansdorp and Graaf-Reinet districts. Secondly, the Central region consists of the Berlin, Bisho, Butterworth, East London, Dimbaza, Fort Jackson and Grahamstown districts. Thirdly, the Northern region consists of the Aliwal North, Cradock and Queenstown districts. Fourthly, the Eastern region consists of the Umtata district. Lastly, the E.G. Kei region consists of the Lusikisiki district.

CHAPTER 2

THEORIES OUTLINING THE IMPORTANCE OF THE MANUFACTURING INDUSTRY

2.1 INTRODUCTION

Economists attach primary importance to the manufacturing sector in analysing economic growth, employment and other major economic issues (Cohen & Zysman 1987:1). According to Verdoorn's Law, as quoted by Thirlwall (1994:61), the manufacturing sector has growth generating characteristics which other sectors of the economy do not possess to the same extent. Over many decades economists have attempted to identify the elements characterising the manufacturing sector. They utilize these elements in the development of explanatory theories or models. Such theories and models are instructive to economists and serve as predictive theories for forecasting the development of manufacturing activities (Bell, Jumper & Ralston 1988:377).

The objective of this chapter is to give an overview of the theories which outline the importance of the manufacturing sector. This is done to obtain a better understanding of manufacturing and how it can be used to create employment and a better quality of life for the people of South Africa in general and the Eastern Cape in particular. Before the theories are outlined, it is important to highlight certain characteristics of the secondary sector. The structure and growth pattern of the sector are outlined in the following paragraphs.

2.2 CHARACTERISTICS OF THE SECONDARY SECTOR

The production of goods and services in any country falls into three broad categories, namely, the primary, secondary and tertiary sectors (Fourie et al. 1995:43). The primary sector specializes in the production of agricultural products and the extraction of raw materials. It consists of industries such as agriculture, fishing and mining. The secondary sector largely

consists of manufacturing (Hayter 1997:12). This sector uses raw materials from the primary sector to produce other goods, for example, processing minerals into mineral products such as steel and the manufacturing of consumer goods such as furniture, clothing, machinery and motor vehicles. The tertiary sector comprises services which include finance, transport, education and tourism (Hess & Ross 1997:388).

The concept 'manufacturing' refers to activities that transform or combine intermediate goods and raw materials into new products in order to make them more valuable. It includes both the formal and the informal sector activities (Chandra 1992:6). The formal sector refers to production activities within the framework of organized markets and legally prescribed types of enterprises. The workers in this sector have regular working hours and are remunerated at agreed wage scales. The informal sector is that part of economic activity that is not recorded in a country's national accounts (Barker 1992:xv). The workers in this sector do not have regular working hours (Todaro 1994:253). Activities such as hawking, street vending and small barbers are included in this sector.

Manufacturing activities are classified in a variety of ways (Hayter 1997:12). Iron and steel are classified as heavy goods and electronics as light goods. Most countries have developed more detailed classes of manufacturing activity as part of 'standard industrial classifications' (SICs). For example, according to the Industrial Development Corporation (IDC) (1997a:1), there are 27 manufacturing groups in South Africa. In Canada there are 22 manufacturing groups (Statistics Canada 1993:203). It is indeed the national SICs that provide the principal source of aggregate data on industries in general and the manufacturing industry in particular.

The manufacturing sector comprises three broad categories, namely capital-intensive (heavy), labour-intensive (light) and intermediate (medium) industries (Abedian & Standish 1992:106). Capital-intensive industries are those which use a high proportion of capital relative to labour (Todaro 1994:664). These industries include industrial chemicals and iron and steel. According to Todaro (1994:686), labour-intensive industries are those which use more labour relative to capital. These include the textile and clothing industries. Intermediate industries are those which require both a high level of labour and large amounts of capital (Abedian & Standish

1992:108). These include those industries that produce the motor vehicles, rubber products and most mining industries.

Industries can furthermore be classified according to their scale of operations, namely large-scale or small-scale industries (Gillis et al. 1996:495). Large-scale industries refer to huge operations employing many workers, usually with relatively high capital-intensive techniques and modern technology. They produce either a basic product such as steel or mass consumption goods such as cars (Dowling & Salvatore 1977:76). Small-scale industries are small firms employing a few workers. They often do not use the most sophisticated and capital-intensive technology. They usually produce products such as shoes, textiles and bricks (Harper 1985:19).

A major characteristic of the secondary sector is that manufacturing has the capacity to generate jobs and to raise the general level of productivity in the economy (Hayter 1997:13). Manufacturing is seen as the source of employment in most developing countries. This is mainly because the traditional sources of employment such as mining and agriculture have become employment saturated (Fourie et al. 1995:129). For example, in South Africa the total share of employment in the manufacturing industry during the period 1960-1980 rose from 13,8 per cent to 19,6 per cent (Barker 1992:58). In Taiwan, employment in the manufacturing sector rose from 20,5 per cent to 42,5 per cent during the same period (Taiwan Statistical Data 1995:65). Todaro (1994:230) indicates that in low-income countries such as India, employment in the manufacturing industry grew by 4 per cent per year for the period 1960-1980. In the middle-income countries such as Brazil and South Korea, employment in the manufacturing industry grew by 4,3 per cent per year between 1960 and 1980.

The manufacturing industry is further characterised by strong backward and forward linkages that are important for the growth and development of a country's economy. Backward linkages refer to the use of inputs from other industries by an industry (Gillis et al. 1996:63). For example, the motor vehicle industry uses products from the machinery and metal processing industries. The industry in turn makes use of steel. Forward linkages refer to a new area of production growing out of a finished product (Dowling & Salvatore 1977:40). For example, a forward linkage for a milk processing plant would be adding ice cream and yoghurt to its

production line. According to Chandra (1992:6), planners involved in accelerating growth put more emphasis on industries with backward linkages, because these industries stimulate production in other sectors.

In most developing countries, manufacturing is encouraged because of its ability to complement the agricultural sector (Chandra 1992:2). The manufacturing industry assists the agricultural industry in processing agricultural commodities. This increases the income of a country because the more processed a commodity, the higher its value. According to Pounds (1981:176), manufacturing adds value to the raw materials used, that is, the manufactured product is worth more than the total value of the materials from which it is derived. For example, cotton is spun into thread that is worth more than the raw material. In turn, the thread is woven into a more valuable fabric. The latter is finished and finally made up into clothing, gaining value at each stage.

2.2.1 Sources of Output Growth

A major characteristic of the manufacturing sector is the presence of economies of scale (Black et al. 1997:112). Economies of scale occur when the scale of productive capacity of a firm or industry expands. This leads to increases in its output and decreases in its cost of production per unit of output (Todaro 1994:673).

Empirical evidence shows that productivity is generally higher in the manufacturing sector compared to either the primary sector or tertiary sectors. According to Hanival & Hirsch (1998:15), increasing returns to scale drive the process of increasing productivity in most parts of the manufacturing sector. Increasing returns to scale refer to a case where, if all the factors of production are increased in a given proportion, output increases at a greater proportion (Fourie et al. 1995:38). If labour and capital are increased by 10 per cent, output therefore rises by more than 10 per cent. They argue that increasing returns to scale may occur because of increases in the scale of operation and productivity or greater specialisation and division of labour. Increasing returns to scale are related to economies of scale (Sloman 1997:140). If an industry receives increasing returns to scale from its factor of production, as it produces more

it uses smaller amounts of factors per unit of output. This means that the industry produces at a lower unit cost.

Returns to scale may be static or dynamic. Static returns to scale refer to a percentage increase in output which results from the same percentage increase in input (Todaro 1994:413). Dynamic returns to scale, however, are more important in terms of productivity. Dynamic returns to scale occur as a result of induced technological progress spread throughout the manufacturing sector through externalities and linkages (Todaro 1994:413). Induced technological progress is a by-product of the physical accumulation of production over time. This can result in enhanced production experience and industrial specialisation, that is, the cumulative effect of manufacturing production encourages technological improvements (Hess & Ross 1997:113).

A further important characteristic of the manufacturing sector involves externalities (Gillis et al. 1996:47). Externalities refer to benefits that accrue to society but cannot be captured by producers. These costs are borne by the population at large and not by individual producers. Externalities arise when a producer does not reap all the benefits or bear all the costs of investment through private profits. There are two main types of externalities, namely pecuniary and technological. Pecuniary externalities arise when the profits of one producer are affected by the input and output levels of other producers (Hanival & Hirsch 1998:15). For example, if producer A opens a business that increases demand for producer B's product, producer B has pecuniary externalities. Technological externalities reflect direct inter-dependence between producers (Gillis et al 1996:56). For example, if skilled workers of producer A leave and work for producer B, producer B will have benefited from producer A's investment without having had to invest in the training of the skilled workers.

The effects of the environment are called externalities (Mears 1999:5). If the production of coal leads to environmental degradation or air pollution, a social cost not born by the producing firm results in a negative externality. This occurs because air pollution is a health hazard created by industries that release toxic substances into air, land and water. It contributes to low production and a low standard of living (Todaro 1994:347). Society benefits from basic

health care such as disease control. This societal benefit results in a positive externality (Hess & Ross 1997:165).

Protection of the environment is an essential part of economic growth and development (Hess & Ross 1997:353). According to Mears (1999:5), the environment is an important resource which society uses in producing and consuming goods and services. It is affected in the process of producing and generating GDP. This means that economic growth and the quality of life of people depend on the quality of the environment. If the environment is not protected, economic development is "undermined" (Mears 1998:257).

According to Todaro (1994:327), the growth of the population in urban areas in developing countries results in shortages of land and water. This leads to little access to public services such as clean water and good sanitation. Efforts have to be made to address these problems. Furthermore, efforts to address these problems involve the use of low-cost alternatives and the provision of jobs to the local population (Todaro 1994:353-354).

2.3 THE STRUCTURE OF THE MANUFACTURING INDUSTRY

The concept 'industrial structure' refers to the relative importance of individual industries or groups of industries within an economy (Todaro 1994:35). According to Hayter (1997:947-49), the main industries in developing countries are food and textiles while in developed countries, industrial chemicals and electrical machinery are some of the main types of manufacturing industries.

The industrial structure of a country can change considerably over time (Chandra 1992:47). Food and textile manufacturing, which is the main type of manufacturing in developing countries, is decreasing while industrial chemical and electrical machinery manufacturing is increasing (Hayter 1997:47-49). In developing countries, the contribution of food manufacturing to total manufacturing production decreased from 18,9 per cent to 8,9 per cent during 1980-1990, while that of textiles decreased from 10,8 per cent to 0,9 per cent. The contribution of industrial chemicals to manufacturing production increased from 4,6 per cent

to 5,3 per cent during the same period. That of electrical machinery increased from 2,6 per cent to 3,7 per cent (World Bank 1993:9). In South Africa, the contribution of food manufacturing decreased from 21 per cent to 17,2 per cent, while the contribution of industrial chemicals increased from 10,4 per cent to 14,3 per cent during the period 1980-1990 (IDC 1993a:14).

According to Todaro (1994:36), change in the industrial structure is part of structural change in a developing society. For example, one of the main characteristics of a more developed country is its structural transition away from agriculture towards manufacturing and the service sector (Pakes 1998:15). As pointed out by Chandra (1992:48), developing countries' industrial structure seems to be replacing those of developed countries.

There are variations in the importance of the manufacturing industry among developing countries. According to Todaro (1994:35), most of the Latin American countries, which have a long history of independence and high levels of national income, have more advanced industrial sectors than African or Asian countries. For example, in 1986 the manufacturing sector contributed 28 per cent to Brazil's GDP and 26 per cent to Mexico's GDP. During the same year, the manufacturing sector contributed 19 per cent to India's GDP and 12 per cent to Kenya's GDP (World Bank 1995:232-233). During the 1970's and 1980's, countries such as Taiwan and South Korea experienced growth in their manufacturing output. The manufacturing sector contributed 30 per cent to South Korea's GDP and 25 per cent to Taiwan's GDP in 1986 (Taiwan Statistical Data 1989:40).

A further element of the structure of the manufacturing industry is the market structure. The market structure refers to the major organisational features of markets (Fourie et al. 1995: 353). These features include the degree of seller concentration, the degree of product differentiation and the barriers to entry and exit. The degree of seller concentration refers to the extent to which activity in the market is dominated by a few large firms (Black et al. 1997:80). One of the common measures used to quantify the extent of concentration in the market is the Gini coefficient. The closer the Gini coefficient is to 1, the higher the level of concentration. There is a high level of concentration in South African manufacturing industries

(Fourie et al. 1995:355). For example, the Gini coefficients for the food manufacturing sector was 0,856 while that of paper products was 0,815 (Black et al. 1997:81).

2.4 PATTERNS OF GROWTH IN THE MANUFACTURING INDUSTRY

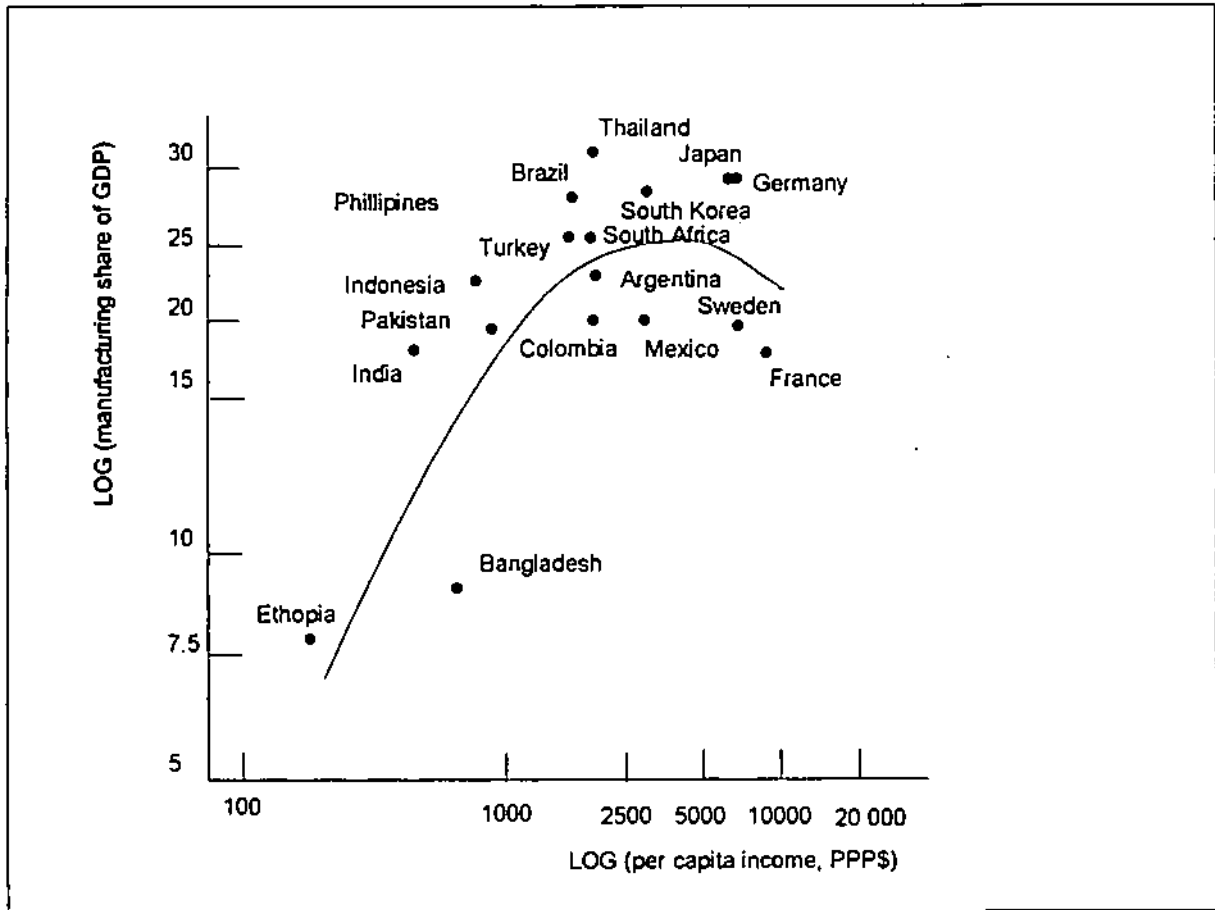
Although the share of agriculture is declining, the increasing share of manufacturing in GDP and the increasing tertiary sector activities is a pattern that is common to all countries (Cohen & Zysman 1987:1). Manufacturing is crucial to the wealth and health of a country's economy. Manufacturing is important for the growth of the economy in the sense that it creates jobs in both the manufacturing and service industries. According to Fabricus & Harris (1996:99), countries have to seek to retain as large a manufacturing sector for as long as possible.

In the late 1980's and early 1990's, manufacturing production remained unevenly distributed throughout the world (Hayter 1997:49). Hayter argues that manufacturing was still dominated by industrialised countries. For example, the US, Japan, Germany, France, UK and Italy accounted for 62,6 per cent, while Belgium, Australia, Finland, Sweden, Canada, Netherlands and Austria accounted for 6,2 per cent of value added to manufacturing during 1990 (Hayter 1997:49). Furthermore, outside the Organization of Economic Co-operation and Development (OECD), the Commonwealth of Independent States (CIS) accounted for 11,1 per cent while China, Brazil, Spain and South Korea accounted for 7,2 per cent of value-added to manufacturing in 1990.

Developing countries share of global manufacturing production increased from 11,8 per cent to 16,6 per cent during the period 1980-1990 (Bairoch 1993:1). Bairoch argues that China has the largest share followed by Brazil, Mexico and India. South Korea, Singapore and Taiwan accounted for 1,5 per cent of world manufacturing production during 1990, while Hong Kong accounted for 1,24 per cent (Bairoch 1993:1).

A further pattern of growth for the manufacturing industry is that higher shares of GDP generated by the manufacturing industry are associated with rising income per capita (Gillis et al. 1996:48). This pattern of value added by manufacturing is shown in Figure 2.1 below.

FIGURE 2.1: MANUFACTURING'S SHARE OF GDP IN 1992



SOURCE: Adapted from World Bank. 1994. World Development Report:166-167.

Figure 2.1 further shows that the pattern of industrial development differs amongst countries and the share of the manufacturing sector of the GDP of a country is determined by variables such as factors of production, experiences with trade and other variables. This occurs even within the upper income and larger countries. For example, the share of the manufacturing sector of GDP in France was lower than that of Germany and Japan. This share was also higher in most of the newly industrialised countries such as South Korea and Brazil (Figure 2.1). This was mainly because these countries took advantage of developing textile, electronics and other manufactures for export. Moreover, the newly industrialised countries have experience in foreign trade (Gillis et al. 1996:61). The share of the manufacturing sector of GDP in South Africa has risen at low levels of per capita income (Figure 2.1). This was mainly

due to the historical development of the manufacturing industry in South Africa which was based on the exploitation of natural resources (Fourie et al. 1995:123). According to Gillis et al. (1996:61), each country faces different conditions. Some countries concentrate on certain industries while others concentrate on different types of industries. Therefore, countries have to concentrate on those manufacturing industries that have shown growth during a particular period or on those in which they have a comparative advantage.

Manufacturing's share of GDP, however, does not grow indefinitely. Value added to GDP in manufacturing declines as economies move out of manufacturing into service industries (Gillis et al. 1996:482). According to Todaro (1994:15), countries that have achieved a high per capita income have also experienced a population shift in that the majority of people move from rural areas to cities and industrial jobs. These countries, therefore, experience an increase in value added through manufacturing. This is mainly because the demand for manufactured products rises when income rises.

2.5 THEORIES OUTLINING THE IMPORTANCE OF THE MANUFACTURING INDUSTRY

Theories of economic development such as the stages of growth, structural change, industrial patterns of growth, Solow's model, new growth theories, including those that protect the environment and the industrial organization theories, have been used to explain the importance of the manufacturing industry over the years. These theories are outlined in the following paragraphs.

The *stages of economic growth and the structural change models* are the two approaches that have dominated the literature on economic development over the past forty years (Gillis et al. 1996:63). These two approaches give a better understanding of the importance of the manufacturing industry. They recognise, through the stages and structural changes, that economic development involves a structural shift in the economy from a high contribution of agriculture and mining in total output, to the position where manufacturing is increasingly responsible for a larger contribution to total output. The two models are outlined in the

following sections.

2.5.1 The Stages of Economic Growth model

It is often argued that countries pass through different stages during the course of development. By identifying these stages, according to certain characteristics, a country has reached a certain stage of development (Thirlwall 1994:54). These stages explain the fact that a country might be dependent on agriculture at an early stage of development. As it develops, it becomes more dependent on the manufacturing sector. For instance, in Taiwan, most of the labour was employed in the agricultural industry in the early stages of industrial development. As agriculture declined, Taiwan proceeded to an industrial-based economy (Schive 1995:22).

Rostow (1960:12) is the advocate of the doctrine of the stages of economic growth. He presents a political theory as well as a descriptive economic study of the pattern of the economic growth and development of countries. The essence of Rostow's theory is that it is logically and practically possible to identify stages of development and to classify societies according to these stages. He distinguishes the five stages, namely traditional, transitional, take-off, maturity and the age of mass consumption. These stages are outlined below.

2.5.1.1 Subsistence/Traditional society

In a subsistence economy, most of society's resources are devoted to providing the basics of life, being, food, clothing and shelter. This economy is predominantly agricultural. There is a basic subsistence level of output and almost all society's energies are focused on physical survival (Bradfield 1988:21). The main forms of economic activity, besides farming, are manufacturing of handicrafts (Fourie et al. 1995:664). Tradition often determines the allocation of resources and output.

2.5.1.2 Pre-conditions for take-off

The shift from subsistence to the pre-conditions for take-off stage occurs because technological

improvement raises output enough to produce a series of surpluses or profits beyond the subsistence level (Bradfield 1988:21). These provide for extra saving and investment, which form the basis for additional improvements in productivity. As agricultural output increases, labour is freed to perform other tasks and craft industries begin to appear. These industries are still incapable of producing the capital goods needed for expanding the manufacturing base. Therefore, imports of capital goods are required. These imports are funded by exporting natural resources and primary products (Hess & Ross 1997:99).

The main economic requirement in the transition phase is that the level of investment be raised to ensure self-sustaining growth (Thirlwall 1994:62). The main direction of this investment is in transport, telecommunications, water and electricity, and in other social overhead capital to build the manufacturing industry's infrastructure. New roads, railroads, waterways, and airports need to be built as they allow movement of essential industrial goods (Nafzinger 1990:97). Improvement in transportation allows for the vital flow of inputs acquired both nationally and internationally. According to the World Bank (1994:14), infrastructure represents the "wheels" of manufacturing activity. For example, the availability of electricity in a clothing industry means that workers use electrical sewing machines relatively more than battery operated sewing machines. These electrical sewing machines increase production because more items of clothing can be made more quickly. Infrastructural investments may, however, be beyond the budget of the government of a developing country. Foreign aid or capital is required to fund the necessary investments (Bradfield 1988:21).

The length of the transition phase depends on the speed at which local talent and resources are devoted to modernising and overthrowing the old order. In this respect, political leadership has an important role to play (Thirlwall 1994:62). According to Nafzinger (1990:98), this phase is further characterised by the growth of the urban-industrial population. In fact, as new seeds and fertilisers are used, new methods of cultivation are adopted, along with increased orientation to the new market. Crop yields increase while labour moves from farming to join the industrial workforce.

2.5.1.3 The take-off period

According to Rostow (1960:17), the necessary condition for an economy to shift from the pre-conditions stage is that the level of saving and investment rise to at least 10,0 per cent of output. At least one high growth manufacturing industry is needed. Such an increase permits capital deepening or a rise in the capital-labour ratio. This raises labour productivity and per capita income. The necessary institutions to exploit the potential created by the first two conditions have to be in place. The above conditions generate a sufficiently large capital stock growth rate, permitting a greater increase in productivity.

During this take-off period, the economic base gradually shifts from predominantly primary to secondary industries. This shift occurs mainly because of increased investment, expansion of markets, rising income and increased demands of labour. Labour is released from farming to join the urban industrial workforce. In fact, growth in manufacturing requires high rates of technical improvement in agriculture in order to free up labour for the developing manufacturing sector (Bradfield 1988:23). According to Hess & Ross (1997:100), increasing manufacturing output cannot be financed by declining agricultural production unless shifts are accompanied by increased manufacturing exports which pay for increased food imports. Given the intensity of the production of exports, Rostow (1960:18) therefore claims that railroads have been a key sector of early growth.

Exports are a major source of demand for domestically produced goods and, therefore, of production, income and employment in the economy (Fourie et al. 1995:501). The development of a major export industry has led to take-off. This permits substantial capital imports because the industry needs capital goods (Thirlwall 1994:63). Sweden is a country which has benefited by importing timber during this stage. It is argued that the leading sector has to have the ability to increase productivity enabling market expansion and output growth (Nafzinger 1990:98).

2.5.1.4 Drive to maturity

The stage of maturity is a period when society has effectively applied the range of modern technology to the bulk of its resources (Thirlwall 1994:63). It is a stage in which savings, investment, and technological change are at high levels. According to Rostow (1960:20),

manufacturing is the fundamental stimulus for growth. New leading manufacturing sub-sectors replace the old. For example, textiles have traditionally been among the initial group of manufacturing sectors to be developed (Hess & Ross 1997:100). Machinery and equipment manufacturing are often the fastest growing sectors during this phase mainly because of the increased demand for manufactured goods as opposed to the decreased demand for agricultural goods. The increased demand for manufactured goods occurs mainly because of the increase in income. In fact, countries grow confident and exert themselves in producing manufacturing goods because the growth of the manufacturing sector expands the general economy. This stage also encounters structural changes in society such as changes in the distribution of the workforce and growth of the urban population. Further increases in income result in high mass consumption because more people demand manufactured products.

2.5.1.5 High mass consumption

The final stage is that of an increasingly diversified growing economy with rising levels of per capita consumption, investment and continued improvements in manufactured goods (Petit 1986:25). The economic problem in this stage is to maintain aggregate demand and to keep it growing at the same rate as output, in order to maintain full employment. This requires high levels of export products which the country has in abundance, namely capital or labour (Bradfield 1988:24). If a country has abundant capital-intensive products it can export these products to sustain growth. If aggregate demand is not increased fast enough, the economy experiences high unemployment (Bradfield 1988:25). Hess & Ross (1997:102) argue that the manufacturing industry needs to be able to deal with unemployment at this stage. According to Fourie et al. (1995:665), this stage is usually reached by developed countries such as the United States. In the United States and United Kingdom, 38 per cent of the labour force was employed in the manufacturing sector in 1990 (World Bank 1993:11).

2.5.1.6 Criticism of the stages of growth theories

Rostow describes one growth process and assumes that it is a universal pattern (Hess & Ross 1997:101). He makes an implicit assumption that growth is synonymous with development.

Rostow's stages imply that the growth of particular types of manufacturing industries can be equated with development. The stages therefore do not only reflect the productivity of each sector but also their patterns of growth.

Rostow's stages of growth are a series of steps that are necessary for development (Kasliwal 1995:35). He argues that development involves a transition from low-income, traditional or subsistence economy to a growing industrial economy (Hess & Ross 1997:115). According to Rostow (1960:12), the take-off stage is the key to economic development. This stage is significant because it involves rapid technical progress or foreign investment, development of economic infrastructure and imports of capital goods needed for the expansion of industry. Hess & Ross (1997:100) also argue that industries in developing countries are not able to produce capital goods because they do not have enough resources to do so, and, therefore import capital goods. South Africa, which is a developing country, cannot manufacture many capital goods (Fourie et al. 1995:139).

Rostow equates the level of development of an economy with the importance of manufacturing. During the early stages of development, the manufacturing industry is less important but becomes more important during later stages. Empirical evidence shows that as an economy develops, resources are shifted away from agriculture to the manufacturing industry. This is so even in developing countries. For example, the share of agriculture in GDP for low-income countries fell from 37,5 per cent to 28 per cent while the share of the manufacturing industry rose from 28 per cent to 35 per cent during the period 1970-1993 (World Bank 1995:232).

2.5.1.7 Placing South Africa and the Eastern Cape in the context of the stages of economic growth model

Van der Berg, as quoted by Townsend & Van Zyl (1998:206), argues that South Africa has completed the five stages of growth. The first stage occurred before the late 1800's when subsistence agriculture dominated the country. Agriculture and mining dominated the country in the second stage during the period 1868-1924. During this period, the share of GDP in agriculture fell from 21,5 per cent to 20,1 per cent while the share of the manufacturing

industry rose from 4,1 per cent to 7,9 per cent (Townsend & Van Zyl 1998:207). The third stage, saw an increase in manufacturing from 7,8 per cent to 10,1 per cent during 1924-1933. The fourth stage occurred during the period 1933-1974 and showed a rapid increase in industrial growth. The share of GDP in manufacturing rose from 10,1 per cent to 21,4 per cent during the same period. Houghton (1976:126) refers to the period between 1933-1951 as the Rostowian "take-off" into sustained economic growth because of the rapid growth of output. The period 1951 to the late 1960's saw industrial development decreasing to such an extent that new sources of growth had to be pursued. The manufacturing industry regained its momentum in the early 1970's. The last stage, saw the transformation of the economy characterised by the growth of the manufacturing industry during 1975 -1993. According to Townsend & Van Zyl (1998:210), the manufacturing industry has had an average annual growth rate of 6,45 per cent per year during 1975-1993, while agriculture and mining had a growth rate of 2,73 per cent and 3,45 per cent per year. The manufacturing industry has also grown in the last five years. By the middle of 1995, the manufacturing industry had a growth rate of 9,1 per cent (IDC 1997a:5). The manufacturing industry's growth rate, however, slowed down to 1 per cent in 1996. During 1997, the manufacturing industry gained momentum and achieved a growth rate of 3,3 per cent (IDC 1998a:6).

The manufacturing industry in the Eastern Cape has shown that the path of economic growth is not as smooth as Rostow's theory suggests. Although manufacturing activity is concentrated in the Port Elizabeth areas, during the mid-1970's to the mid-1980's, manufacturing resources shifted from this area to the East London/King Williams Town area (Nel 1993:21). The shift was the result of decentralisation incentives of the Regional Industrial Development Programme [RIDP] and relocation of the Ford motor industry. According to Horn et al. (1995:25), the share of the manufacturing industry in the GGP of the Province was 26 per cent in 1991 and 24,3 per cent in 1993. Government, community, social and personal services contributed 27,3 per cent to the GGP of the Eastern Cape province in the same year. The fact that the government has made the most contributions shows that the province has a structural problem because the government cannot generate growth on its own (Horn et al. 1995:26). Furthermore, in 1993, the Port Elizabeth/Uitenhage and East London metropolitan areas generated 61 per cent and 20,8 per cent respectively of manufacturing production in the Eastern Cape (Ernst &

Young et al. 1995:5). The other regions do not have large industrial concentrations and therefore have an opportunity to create small, medium and micro-enterprises (SMME).

One of the conditions in Rostow's take-off stage is more investment to accelerate economic growth. Todaro (1994:68) argues that this condition is not sufficient in the developing countries. This is because developing countries do not possess the necessary infrastructure. The Eastern Cape has a good infrastructural and industrial base in the Western Region areas such as Port Elizabeth/Uitenhage, and the Central Region area such as East London. The other regions such as the Northern, Eastern and East Griqualand-Kei and some Central region areas have infrastructural problems (Ernst & Young et al. 1995:7). There are, however, good quality factories in Butterworth, Queenstown and Umtata (Horn et al. 1995:37).

Recent independent surveys identified the Eastern Cape as having a comparative advantage in certain industries and investment opportunities. These industries include food processing, electronic appliances, fabricated metal products, textiles, leather shoes and pottery (CIMEC 1998:9). With such industries, the Eastern Cape has the potential to grow and reach Rostow's "drive to maturity stage".

According to Hanink (1997:414), the general applicability of Rostow's theory, as a theory of economic development with regard to currently developing economies can be questioned. This is because eighteenth and nineteenth century European history appears to be declining in the contemporary global economy. Each country has a unique historical, cultural, political and economic circumstances (Bradfield 1988:27). However, Hanink (1997:414) argues that the past experiences of some countries can be used to predict the future experiences of other countries. For instance, Taiwan and South Korea adopted export-orientated policies which gained momentum in the 1970's. South Africa was unable to benefit from these policies during that period because of international isolation and overvaluation of its currency (Schrire 1992:448).

The analysis of the initiation of economic growth and development can be extended by considering two sectors, namely agriculture and manufacturing. A universal feature of the economic development process has been the transfer of resources out of the agriculture industry

and into the manufacturing industry, along with a shift in population from rural to urban areas. The model by Lewis (1954:416) addresses this basic structural change and is outlined below.

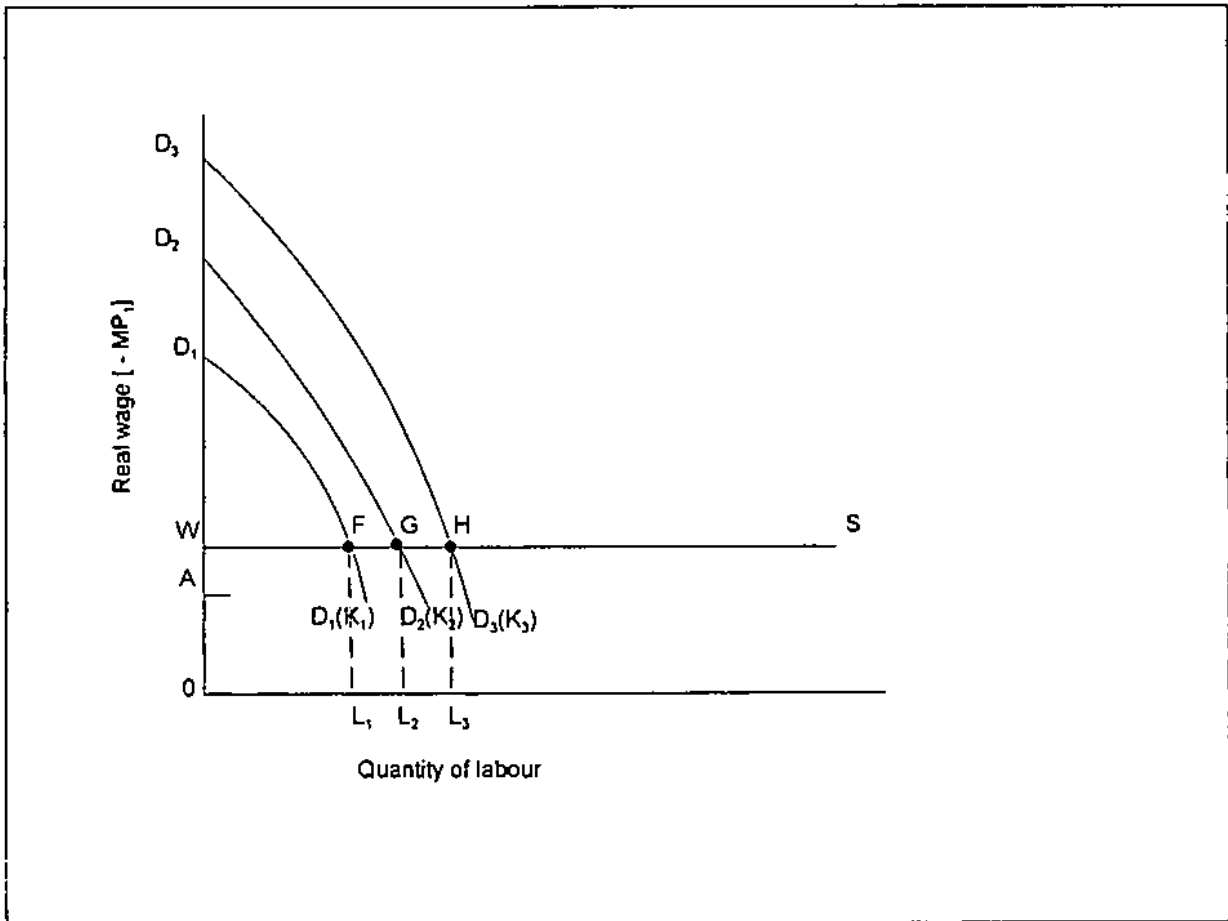
2.5.2 THE LEWIS MODEL

Lewis (1954:139) sets out a model which focuses on the structural transformation of a rural subsistence economy to a modern urban industrial sector. He uses the following assumptions to explain the mechanism by which economies transform their economic structures from a traditional subsistence agriculture to a modern urban industrial sector:

- The rural subsistence (traditional) sector is overpopulated and characterised by zero or very low productivity or surplus labour. He classifies labour as "surplus" labour because it can be withdrawn from the agricultural sector without any loss of output (Hess & Ross 1997:102);
- The modern urban industrial sector has high productivity and draws labour from the rural traditional sector. Lewis (1954 :140) focuses on the process of transfer of labour and on output and employment growth in the modern sector. The process of transfer of labour and growth occurs as a result of the expansion of the modern sector (Todaro 1994:74). The rate of industrial investment and capital accumulation in the modern sector determines the speed at which the expansion occurs;
- So-called 'capitalists' reinvest their profits to make industrial investment possible;
- Wages in the industrial sector have to be higher than the average rural income and workers therefore are inclined to migrate from the rural areas to the urban areas. The supply curve of rural labour to the modern sector is considered to be perfectly elastic at the urban wage rate.

The Lewis model is illustrated in Figure 2.2. It shows the process of growth in the modern sector. OA represents the average level of real subsistence income in the traditional rural sector. OW is the real wage in the modern sector.

FIGURE 2.2: THE LEWIS MODEL



SOURCE: Adapted from Todaro, M. 1994. *Economic Development in the Third World*:75

At OW , the supply of rural labour is assumed to be "unlimited" or perfectly elastic, as shown by the supply curve WS . Given a fixed supply of capital (K_1), the demand curve for labour is determined by the declining marginal product and is shown by the D_1K_1 curve in the initial stage of modern sector growth.

Lewis (1954:150) argues that at OW , employers in the modern sector can employ as many workers as possible without fear of rising wages. Since employers hire labourers to the point where their marginal product is equal to the real wage (F), employment in the modern sector is equal to OL_1 and total output in the modern sector is OD_1FL_1 . The share of this output paid to workers in the form of wages is equal to $OWFL_1$ and the profits are WD_1F . Profits are

reinvested causing the total capital stock in the modern sector to rise from K_1 to K_2 . The large capital stock causes the demand curve for labour to rise as indicated by D_2K_2 in the figure. A new equilibrium urban employment level is established at G and OL_2 workers are employed. Once again, WD_2G profits are reinvested, increasing capital stock to K_3 . The demand curve for labour shifts to D_3K_3 and employment is OL_3 . Total output increases to OD_3HL_3 , while wages are $OWHL_3$ and profits are WD_3H .

The Lewis model shows that as profits continue to be reinvested, growth and employment continue to rise until the surplus rural labour is absorbed by the modern sector. More workers can thereafter be moved from the agricultural sector at a higher cost of lost food production since the marginal product of rural labour is no longer zero. The labour supply curve becomes positively sloped because wages and employment in the modern sector continue to grow (Todaro 1994:76). This means that structural transformation of an economy takes place as economic activities shift from the traditional sector to the modern sector.

2.5.2.1 Criticism of the Lewis model

The essence of the Lewis model is that economic development is seen as the alteration of the structure of production and employment (Todaro 1994:77). This means that the share of agriculture in both production and employment declines, whereas that of the manufacturing industry rises. The model describes how the manufacturing industry grows to overtake the agricultural industry. The process of withdrawal of labour from the rural areas to the urban sector to provide manpower for urban industrial growth is deemed to be beneficial (Hess & Ross 1997:257). The reason being that human resources are shifted from locations where their marginal product is assumed to be zero to places where the marginal product is not only positive but growing rapidly as a result of capital accumulation and technological progress.

The Lewis model indicates that developing countries have a potential for growth and that income distribution is a problem. This is because in the early stages of economic growth and development, everyone receives a subsistence wage. Labour is, thereafter withdrawn from the traditional to the modern sector. This transferred labour is used to produce capital goods. As

industry expands, the capital stock and productivity of labour increases (Hess & Ross 1997:103). Industrialists, therefore make profits and income inequality increases. Industrial wages become higher than subsistence wages in agriculture. Industrial profits encourage industrialists to accumulate capital and expand industry (Kasliwal 1995:99).

Industrial growth historically indicates that, after two generations of development the modern sector has not significantly used the surplus labour available in developing countries (Kasliwal 1995:101). Lewis argues that although people migrated to the cities not all find jobs in the manufacturing industry. Consequently, this pattern of growth is manifested in the high population growth in the urban areas of all developing countries. Kasliwal (1995:102) further argues that most people do not find jobs because labour-saving technological methods are used. Industries use excessive capital-intensive techniques that are inappropriate for developing countries with surplus labour. In South Africa, for example, there is an increase in capital intensity of the economy (Barker 1992:92). Labour is therefore replaced by capital. This situation is one of concern because South Africa has abundant unskilled labour and has to import capital (Fourie et al. 1995:140). According to Hess & Ross (1997:77), developing countries with no domestic substitutes for imported capital goods need foreign exchange in order to increase domestic production and employment.

The Lewis model of surplus rural labour is not relevant in contemporary developing countries (Hess & Ross 1997:257). Most developing countries today have seasonal labour shortages in rural areas. This happens at times of peak demands for labour while having labour surplus in urban areas, particularly in the modern sector employment. For example, workers from the Transkei migrate to the East Rand or Port Elizabeth in search of employment. Therefore, there is a shortage of labour during harvesting or planting time.

The Lewis model is a point of departure for models that explain the migration of labour from rural to urban areas. As development continues, rural areas are unable to provide employment opportunities for their growing population. People, therefore, move from rural to urban areas with the hope of finding jobs (Barker 1992:45). In South Africa, people were restricted from moving to urban areas by laws such as influx control and the Group Areas Act. The Eastern

Cape, being the province with the third highest population, has large numbers of migrants (Development Bank of South Africa [DBSA] 1994:59). Furthermore, the DBSA argues that the large number of migrants come from the rural areas of the Central, Northern, Eastern and East Griqualand-Kei regions. They move mainly to the metropolitan areas of South Africa such as Cape Town, East Rand and Port Elizabeth.

The Lewis model is useful in illustrating the dualistic nature of economic development (Hess & Ross 1997:105). It illustrates the fact that the manufacturing sector is important and relies on the agricultural industry. The model can be interpreted as having laid the foundation for the industrial patterns of growth theories outlined below.

2.5.3 THE INDUSTRIAL PATTERNS OF GROWTH

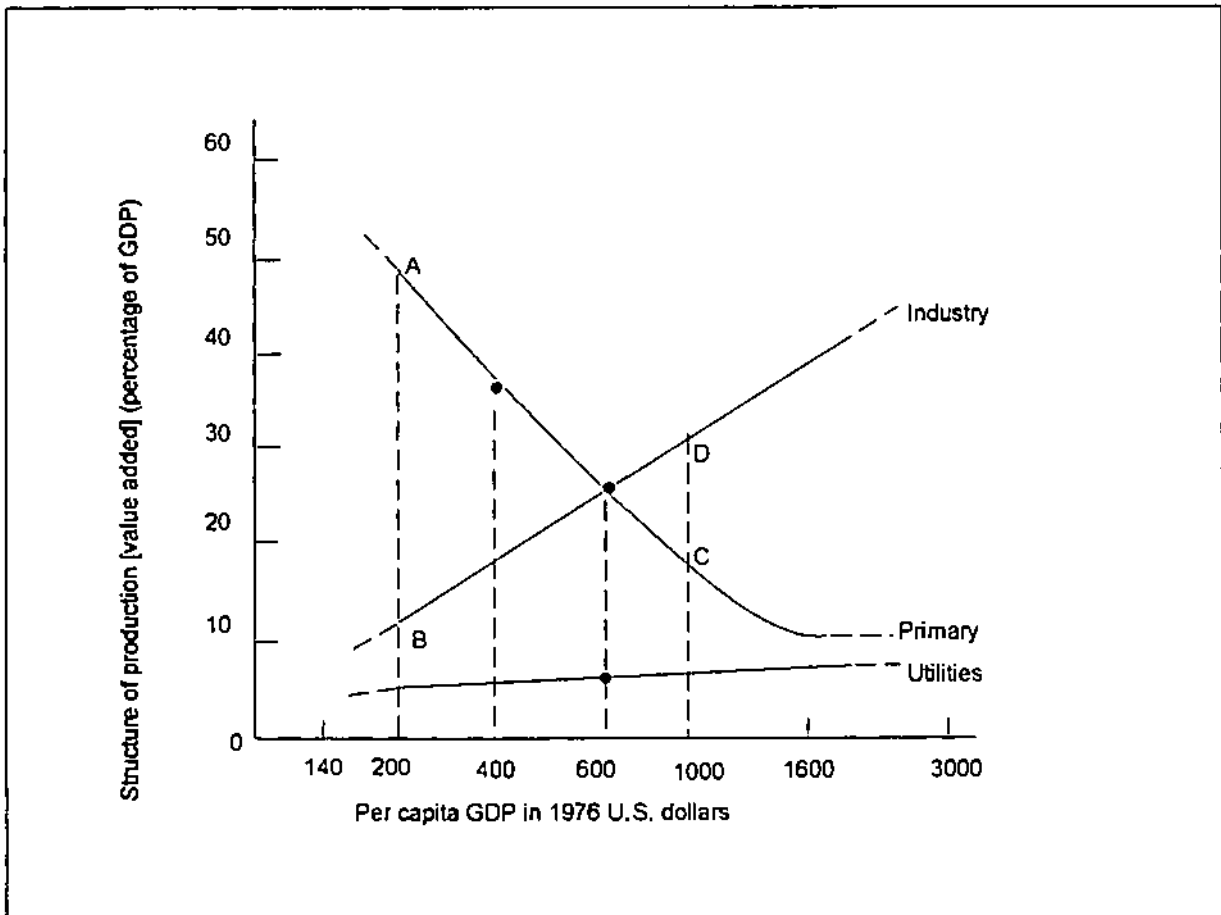
The industrial patterns of growth theories reveal that economists need to know which manufacturing industries develop at each stage in a country's growth in order to plan and focus their energies on those industries. For example, if industrial development begins with textiles, planners could first establish a textile industry and develop other sectors later (Gillis et al. 1996:48). There are two approaches to the industrial patterns of growth, namely, the empirical approach and the theoretical approach. The theoretical approach consists of the balanced and unbalanced growth theories. These approaches are outlined in the following paragraphs.

2.5.3.1 The empirical approach as an industrial pattern of growth

The patterns of development analysis of structural change explain the process through which the economic and industrial structure of an economy is transformed over time. This allows new industries to replace traditional agriculture as the engine of growth (Todaro 1994:79). The best known structural change model is that based on the empirical work of Hollis Chenery (1979:xvi) (Figure 2.3). In examining the industrial patterns of growth among different countries, at a given time and over long periods of time, Chenery (1979:334) finds that factors such as the transformation of the structure of production, changes in consumer demand, access to technology and capital and trade are important factors required in the transition from a

traditional to a modern industrial sector. They therefore contribute to the industrial pattern of growth.

FIGURE 2.3: THE CHENERY MODEL



SOURCE: Adapted from Chenery, H. 1986. *Patterns of Development*:391-416.

Figure 2.3 indicates that as per capita income increases, the share of agricultural output declines and that of manufacturing output in GDP rises. For example, countries with a per capita income of \$200 in 1976 had a primary production contribution of 45 per cent of GDP. Their industrial production was approximately 15 per cent. At an income of \$1000 primary production decreased to 20 per cent and industry production increased to 28 per cent of GDP.

Figure 2.3 shows that, countries below the income level of \$600 are viewed as being in the early phase of development (Chenery 1979:xvi). Those above \$600 but below \$3000 are viewed

as being in the later phase of development. The early phase of development, depends on agricultural production as a source of income and growth. This is mainly because of the high structure of production in agriculture relative to industry. A later phase of development depends on industrial production because of the high structure of industrial production.

Chenery (1979:335) further finds that as per capita income rises, changes in consumer demand rise. People demand more manufactured goods than agricultural goods when their income increases. According to Gillis et al. (1996:61), increases in income are concentrated in the modern urban sector. The rise in industry and the rapid increase of migration, therefore, causes an increase in urbanization.

2.5.3.1.1 Criticism of the empirical approach

The empirical approach emphasizes that factors such as changes in demand, access to technology, human and physical capital are important in the transition from a traditional to a modern society. According to Todaro (1994:79), not only savings and investment are necessary for economic growth but also human capital. Furthermore, not all developing countries have access to capital and technology. This makes other developing countries to transform earlier than others.

The pattern of growth among developing countries is different because each country has different circumstances. Although there is no single pattern of growth, certain patterns tend to be common among developing countries (Gillis et al. 1996:61). These patterns are influenced by development policies of governments of developing and developed countries (Hess & Ross 1997:101). For example, the share of GDP in agriculture is declining and that of manufacturing is rising. As a result, developing countries are dependent on manufacturing production.

2.5.3.2 BALANCED GROWTH MODEL

The engineer of this theory is Paul Rosenstein-Rodan (1943:202-211). He argues that countries have to develop a wide range of industries simultaneously if they are to succeed in achieving

sustained growth. For example, a textile industry can be built along with a clothing industry or a furniture industry with a wood products industry. According to Gillis et al. (1996:62), industries have to be built simultaneously to prevent the occurrence of supply bottlenecks. In building a steel mill, planners therefore need to develop iron and coal mines, unless imports of these inputs are available.

Rosenstein-Rodan (143:2109) argues that a large investment or big push in infrastructure, such as transport and communications, contributes to economic growth. For example, transport benefits all workers whether in the steel or coal industry. Benefits received through additional transport in the steel industry, therefore, assist other industries. According to Elkan (1995:65) and Nafzinger (1990:96), the development of a manufacturing industry requires heavy investment and large amounts of capital. Some countries do not have the capacity to establish a wide range of industries nor do they have enough resources to launch a big push. Even in the absence of a big push, certain manufacturing products have markets (Gillis et al. 1996:63). This is the essence of the unbalanced growth theory which is outlined below.

2.5.3.3 UNBALANCED GROWTH MODEL

Hirshman (1958:193) is the main proponent of this theory. He argues that since the LDCs do not have the skills needed to launch a 'big push' throughout the whole economy, it is sensible to do so in certain selected manufacturing industries within the economy. He, therefore, recognises that countries concentrate on different industries at each stage of development.

Central to Hirschman's theory, as quoted by Nafzinger (1990:88), is that manufacturing industries can be linked to other manufacturing industries in order to stimulate production. A linkage refers to the connection of one industry while it develops with another (Dowling & Salvatore 1977:40). The linkage may be backward or forward. A backward linkage refers to a connection that arises from the actual production process of a good, implying that industries can make use of input from other industries (Nafzinger 1990:88). For example, the establishment of a battery industry in response to the input needs of a newly constructed transistor radio plant. A forward linkage refers to a new area of production growing out of a

finished product (Dowling & Salvatore 1977:41). For example, a forward linkage for a milk processing plant could be the adding of ice cream and yoghurt to its production lines.

According to Gillis et al. (1996:65), the manufacturing industry gives rise to additional activity in other industries. For example, in an area where agriculture is prosperous, manufacturing activities such as food processing and feed production have to occur, indicating that the need for a manufacturing industry is high in this area.

2.5.3.4 Criticism of the industrial patterns of growth theories

The model recognises that the pattern of development in countries varies according to domestic and international factors. It depends on a country's particular circumstances. Factors influencing this pattern of industrial growth include transformation of the structure of production, changes in consumer demand and access to technology and capital. Countries with large populations, such as Brazil and India, have a more diversified resource base and a larger internal demand. The large internal demand enables these countries to industrialize earlier and to exploit economies of scale without the need to penetrate export markets. Smaller countries, such as Taiwan and South Korea, have smaller internal demand. The small internal demand enables these countries to industrialize later because they also have to rely on external demand and foreign markets (Todaro 1994:77).

Besides the structuralist and industrial patterns of growth theories, other growth theories such as Solow's, endogenous growth and industrial organization were formulated. Solow's model emphasises investment or additions to capital stock are important in economic growth while the endogenous growth model emphasises that accumulated human capital, the stock of technical know-how and the existing physical infrastructure (Black et al.1997:360). The industrial organization model emphasises the organization of the manufacturing industry. They are outlined below.

2.6 SOLOW'S GROWTH MODEL

Solow (1956:65-94) formulates a growth model which emphasizes that inputs can be substituted for one another in manufacturing production to generate output. He further argues that relative supplies of factors change with economic growth. This leads to a change in their relative prices. The capital-labour ratio can therefore change in this neoclassical model. According to Kasliwal (1995:110), economic growth continues to take place even if there is no balance between the growth of capital and labour.

Solow's neoclassical model consists of the following elements $Y = F(K, L)$. K represents capital and L labour. The equation used above illustrates the fact that both capital and labour can be used to produce output. According to Solow, as quoted by Kasliwal (1995:111), if labour becomes abundant, production techniques switch to utilize more labour in relation to capital. This results in an increase in employment and output.

The model assumes firstly that, in a closed economy, investment equals savings, while in an open economy, investment differs from saving by the extent of net foreign borrowing (Solow 1956:67). Furthermore, investment contributes to capital accumulation each year. Secondly, the model assumes that labour grows exogenously. Consequently, output growth equals growth rate of labour regardless of the saving rate. A steady state of growth is eventually reached where capital and labour grow at the same rate as per capita income and the capital-labour ratio is constant. Solow, as quoted by Hess & Ross (1997:78-80), states that economic growth is indicated by increases in per capita output. This requires increases in the capital-labour ratio and technical progress. For example, the United States has relatively more capital than labour so it uses capital-intensive techniques. Mexico has relatively more labour than capital and uses labour-intensive techniques of production (Kasliwal 1995:112).

2.6.1 Criticism of Solow's model

Solow's model brings together the various elements needed for growth in the manufacturing industry, namely, the accumulation of factors of production and technological progress. This

is useful in the long-term because it shows what the determinants of economic growth are (Kasliwal 1995:113).

Solow's model does not assume that there are structural problems as in earlier development models. Structuralists such as Chenery point out that prices do not adjust freely in developing countries. Markets cannot adjust in developing countries because of a lack of information, externalities and increasing returns to scale. He argues, however, that growth is possible due to factor substitution. Furthermore, regardless of the saving rate, the economy ultimately settles at a constant level of per capita income (Kasliwal 1995:112).

The model predicts that if labour is abundant, production techniques have to utilize more labour in relation to capital. In practice many developing countries, such as South Africa, became capital-intensive. The manufacturing industry in South Africa depends on imports of capital goods. As economic activity increases in the country, imports increase. These imports have to be paid for in foreign currency. If South Africa is to be internationally competitive, it has to import capital goods (Fourie et al. 1995:501).

Although Solow's model does not explain the actual growth behaviour of countries, it points to the following question: Are growth rates systematically related to the level of income? The model, therefore, explains that there are low levels of per capita output and income in less developing countries (Solow 1956 :90). These levels exist because of the low capital-labour ratios which reflect an abundant supply of labour (Hess & Ross 1997:74).

2.7 NEW GROWTH THEORIES

The new growth theories are not as fully developed as the other theories. They represent an emerging development theory of the 1990's (Todaro 1994:89). They argue that economic growth in developing countries is prohibited by poor infrastructure and low levels of investment in human, natural and social capital. This leads to a decrease in employment opportunities. The manufacturing industry plays a role in improving these conditions. These theories are outlined below.

2.7.1 Endogenous growth theory

The endogenous growth theory originated in the 1980's. It was stimulated by the theoretical concerns of Solow's growth model. Solow's model assumed that, in the manufacturing industry, an increase in investment results in a decrease in the marginal product of capital because of the exogenous technological change (Hess & Ross 1997:110). The endogenous growth theory further assumes that technological growth and capital accumulation are important sources of growth (Kasliwal 1995:114).

The theory consists of the following elements $Y_t = F [K_t, L_t, A_t]$. Y_t represents the level of output. K_t and L_t represent the levels of capital and labour. A_t represents the level of technology. This equation states that the level of output in the economy is a function of input of capital, labour and technology (Grossman & Helpman 1992:36). Technology includes both physical technology and knowledge (Froyen 1996:411). New investment leads to new inventions and ideas. This improves the level of knowledge. According to Arrow (1962:155), an improvement in knowledge means learning. Learning by doing leads to increasing returns to scale. Furthermore, it increases capital and labour (Blignaut et al. 1999:23). This means that as more labour is employed, new skills have to be acquired.

According to Romer (1994:3-22), there is an existing stock of knowledge in society and firms. Knowledge is a by-product of capital formation, with benefits that spread throughout the economy. This means that in manufacturing capital goods, industries generate additional knowledge. This knowledge contributes to the productivity of resources in the next manufacturing activity (Grossman & Helpman 1992:35). Thus, manufacturing industries invest in the existing stock of knowledge which they use together with labour to produce output.

Romer (1994:3-22) assumes that the existing stock of knowledge passed by manufacturing industries determines technical progress. Knowledge, therefore, becomes the endogenous input which leads to increasing returns. This is mainly because if inputs increase by a certain proportion, outputs increase more than proportionally (Fourie et al. 1995:38).

According to the endogenous theory, development involves increasing returns to scale unlike Solow's model that assumes constant returns to scale (Hess & Ross 1997:110). Increasing returns to scale are a characteristic of the manufacturing industry and applies to modern industrial technology. Romer (1994:3-22) argues that output depends on capital, labour and the state of technology. If these three variables are used together, increasing returns occur.

According to Romer (1994:3-22), developed countries use more advanced technology than developing countries. This technological advance occurs mainly due to knowledge spillovers from increases in capital stock, human capital and as a function of increasing income. He argues that the contribution made by technical progress to economic growth is seen in capital and intermediate goods (Hess & Ross 1997:111). Capital goods are valued according to the value of inputs used in the producing these goods (Wright 1994:51). Furthermore, increasing returns to investment in physical capital occur as new technology spreads throughout the economy. Romer (1994:3-22) argues that growth occurs endogenously as advanced countries tend to accumulate capital at a higher rate. The special status afforded to capital is matched by an emphasis on heavy industrialization. The lack of capital in developing countries appears to be the most serious constraint to economic growth and development.

2.7.1 Criticism of the endogenous growth theory

Unlike neoclassical models, which rely on capital accumulation only to generate growth, the endogenous theory relies on investment combined with the existing stock of knowledge and human capital. The endogenous growth theory highlights the role of technological progress in sustaining growth in manufacturing industries. Although technological advances are included in the production of capital and intermediate goods, access to modern technology differs across countries (Hess & Ross 1997:115). They argue that some developing countries do not have access to the latest technology due to differences in human capital and income levels. Although some developing countries have purchased advanced technological systems, they have not reduced poverty. They do not use their abundant resources and produce in a labour-intensive manner. This means that developing countries invest too little in human capital. This results in poor economic growth. According to Romer (1994:3-22), the growth of knowledge, which is

the source of economic growth, results from investment in human capital.

During the period 1945-1974, manufacturing industries in South Africa experienced rapid capital accumulation (Schrire 1992:454). He argues that since the 1970's, investment in manufacturing industries has been slow as indicated by capital deepening (Fourie et al. 1995:141). Capital deepening was mainly caused by the substitution of labour by capital due to work stoppages, overvaluation of the rand and negative real interest rates (Schrire 1992:45). Therefore, the manufacturing industry in South Africa is predominantly capital-intensive (Wright 1994:84). Reliance on capital deepening is not unique to South Africa. Developing countries have experienced growth through capital accumulation (Kasliwal 1995:187). Investment increased during 1993-1994 and decreased once more during 1995-1996. In the first quarter of 1997, investment regained its momentum (IDC 1998a:6).

The technological feature of large economies of scale is a further reason for developing countries to have favoured the manufacturing industry (Kasliwal 1995:187). The import substitution strategy aims to restrict imports so that local manufacturing industries produce at larger scales. In South Africa, the contribution to economic growth and manufacturing development by import substitution diminished during the late 1960's (Schrire 1992:453). Empirical evidence shows that heavy industry dominated manufacturing production in South Africa. This dominant position is attributed to early exhaustion of opportunities for import substitution in light industry and unequal distribution of income (McCarthy 1988:11). With unequal distribution of income, production focused on the needs of the rich. For example, the production of luxury goods received preference over the basic needs for food and shelter for the poor. It could therefore be argued that, in South Africa, dominant industries and unequal distribution of income encouraged development of the manufacturing industry that was biased towards producing for the needs of the rich.

Unlike Solow's model, this theory assumes that endogenous technical progress is determined as a function of input, such as investment in physical or human capital. The rate of technical progress is based on learning-by-doing or the level of educational achievement. Thus, additions to human or physical capital and technical know-how yield increasing returns because they

create externalities that benefit other industries in the economy (Black et al. 1997:360).

The endogenous growth theory has important implications for South Africa. The theory argues that South Africa, with an abundant unskilled labour, can raise the level of skills of the labour force. This can be done by employing and training more labour. According to Blignaut et al. (1999:26), more labour can be employed in labour-intensive industries such as SMME's. This is because SMME's use local resources and require relatively little capital.

2.7.2 Theories protecting the environment

The neoclassical growth models consider economic growth to be dependent on the level of investment and employment to be a function of economic growth. According to Todaro (1994:89), these theories emphasise that socio-environmental factors such as the rapid growth of population, low income, poor health, malnutrition and unemployment contribute to low levels of economic growth and development. An improvement in the socio-economic environment improves productivity, which in turn, promotes growth and development (Blignaut & Schoeman 1998:302).

According to Mears (1998:257), capital, whether physical or human is an important resource in developing countries. This resource, especially human capital is often underutilised. Furthermore, this results in unemployment which is a limiting factor in economic development.

The primary objective of economic policy is to improve the quality of life and welfare of people (Loots 1998:324). This objective can be achieved through economic growth which ensures employment opportunities. The manufacturing industry has the capacity to generate jobs for the growing population in a country (Jordan 1998:717).

According to Todaro (1994:327), the growing population has contributed to the depletion of resources that they depend on in order to survive. If these resources are adequately protected, a sustained environment is created. This in turn leads to economic development. Resources, however, that are depleted in one area can be generated elsewhere (Mears 1998:258). This

means that waste products in one industry can become raw materials in another.

The waste problem in developing countries is expected to increase mainly because of the rapid increase in population (Mears 1998:262). This is an opportunity to develop SMMEs. For example, recycling industries can be developed. This, in turn, can lead to more employment opportunities.

Although the manufacturing industry in South Africa is affected by large disparities in the socio-economic environment, it has the capacity to generate jobs (Blignault & Schoeman 1998:316). These disparities include poor access to quality education, lack of sufficient primary health care services, shortage of formal housing and low infrastructure. This results in low levels of productivity and economic growth. This in turn leads to unemployment. New approaches, such as those protecting the environment, however, have to concentrate on increasing employment in order for the growing population to participate in growth and to benefit from it.

2.8 INDUSTRIAL ORGANIZATION THEORY

The industrial organisation theory explains how technology interacts with the market structure to determine how industry is organized and contributes to output (Blair & Kaserman 1985:429). Industry can be organised in the form of a conglomerate. A conglomerate brings different industries involved in different product lines under one umbrella (Kasliwal 1995:296). These industries get together in order to share common functions such as finance, accounting and management capabilities, diversify into specific lines of business, have more political influence, reduce taxes and to efficiently allocate capital.

According to Brozen (1982:354), conglomerates are able to obtain a better return on both human and physical capital investment and compete effectively in world markets because diversification enables them to produce more, bringing innovation and progress. The share of manufacturing output of these industries, therefore, increases and leads to more growth. For example, conglomerates in the U.S. contribute to the growth and increase in the manufacturing

assets (Shughart 1990:73). The manufacturing sector in the U.S. is dominated by conglomerates who control 60,7 per cent of manufacturing assets (Hayter 1997:330). Empirical evidence shows, however, that the recent slow growth of the U.S. economy is attributed to restrictions placed on growth of the U.S. industries.

According to Joffe et al. (1995:133), the South African economy is characterised by diversified conglomerates, large monopolies and oligopolies who are members of the same corporate group. Furthermore, these industries have high levels of concentration. In the Eastern Cape, the degree of concentration amongst industries differs. Manufacturing industries are concentrated in the Port Elizabeth metropolitan areas (DBSA 1997:5). Joffe et al. (1995:133) argue that conglomerates in South Africa help subsidiary industries in difficult times, because they have financial resources. Consequently, industries with powerful financial resources are able to drive away competitors by reducing prices and once industries are out of the market prices rise once more.

The manufacturing industry in South Africa has six large conglomerate controlled companies, namely the Anglo American Corporation, Sanlam, Old Mutual, Liberty Life , Anglovaal and Rembrandt. These industries accounted for 85,7 per cent of market capitalisation of the JSE in 1995 (Joffe et al. 1995:133). Furthermore, these conglomerates control manufacturing via subsidiary groups. For instance, Sanlam has manufacturing interests in Gencor and Murray and Roberts. The manufacturing groups are, in turn, diversified. Porter (1991), as quoted by Pakes (1998:25) argues that these industries have competitive advantages in certain sectors and are called clusters. Clusters identify opportunities and address these as a team. The Department of Trade and Industry, therefore, undertook a cluster initiative programme in various regions in 1997. This initiative encountered problems such as lack of participation by industries and poor management. According to Joffe et al. (1995:67), there is little inter-firm sharing of technical and managerial resources between the manufacturing groups within the conglomerates in South Africa.

Empirical evidence shows that the shortage of capital and skilled labour is a problem in developing countries because they favour capital-intensive techniques developed in the West.

This results in unemployment mainly because of the relative cost of capital to labour. These countries, use the capital-intensive techniques in order to compete internationally. The Eastern Cape is not unique when compared to other developing countries in that it has a shortage of skilled labour (Ernst & Young et al. 1995:5). The focus is now on small, medium and micro-enterprises (SMMEs) which are suited to local conditions (Fourie et al. 1995:667). For example, sub-region 3,4, and 5 have opportunities of creating SMMEs (Ernst & Young et al. 1995:10). Some manufacturing industries, such as furniture and clothing, have many SMMEs, hence, the trend towards inter-firm co-operation.

The notion of inter-firm co-operation is important in the industrial organisation theory. Japanese manufacturing industries, and the network of firms supplying them, provide an example of co-operation between small and large firms (Joffe et al. 1995:82). There is little or no evidence of such co-operation in South Africa, except between the small firms themselves. Instead, large corporations absorb smaller enterprises through takeovers and mergers (Manning & Mashigo 1994:30-31). Hayter (1997:330) argues that a localised network of producers allows for the development of subsidiary industries, specialised training programmes and exchange of information. This development contributes to investment in labour and economic growth (Pyke & Sengenberger 1992:26).

2.9 SUMMARY AND CONCLUSIONS

Various theorists have offered valuable insight concerning the importance of the manufacturing industry. They have shown, through their models, that the manufacturing industry contributes to the growth and development of a country. Some theorists, however, argue that certain countries industrialise at an earlier stage of development and others at a later stage. Industrialization depends on the condition of their economies.

The pace of industrialization in developing countries is limited by factors such as the lack of know-how and capital. The shortage of skilled labour complicates the situation further because these countries use capital-intensive techniques used by developed countries. The adoption of this technology results in unemployment. Therefore, in order to provide jobs for the growing

labour force in developing countries, appropriate technology have to be developed. This has to be done by modernising existing labour-intensive methods or by adapting capital-intensive techniques to be labour directed.

The early growth models include Rostow et al. Rostow's theory indicates that a series of steps is necessary for development and that development of a country can be associated with the steps of an escalator. Once one step is completed, the next step can follow. For example, in the early stages of economic development, the primary sector is characterised by a large share of total production. As development continues, the secondary sector, especially manufacturing, becomes responsible for a large share of total production. In other words, the share of value added contributed by the secondary sector, expands in relation to the primary sector as development continues.

As economic development continues in developing countries, unemployment is large and persistent. It is the source of social tensions and political problems. Labour is no longer seen in these countries as a free resource, as indicated in the Lewis model. Thus the creation of employment opportunities becomes an important issue. The manufacturing industry which has the ability to create employment, is expected to deliver.

One of the characteristics of developed and developing countries is their structural shift away from agriculture towards the manufacturing and service industry. The Lewis and Chenery models analyse structural change within the development process. Lewis emphasises the fact that the agricultural sector and the manufacturing industry are segregated structurally, and that labour from the agricultural sector can be used productively in the modern sector. This is mainly because the modern sector focuses on the accumulation of capital. Chenery argues that many countries have characteristics such as more investment, changes in consumer demand and technical processes.

The neoclassical growth models, such as Solow's model, argue that factors can be substituted for each other in such a way that not one factor is responsible for growth. The model, furthermore, assumes that the process of technological change stems from exogenous forces.

Recent growth models, such as Romer's model, argue that technological innovations arise endogenously from investments in human capital. Furthermore, these models show that additions to the components of capital yield increasing returns. This is mainly because they create externalities that benefit other industries in the economy. Investment in human capital, for example, generates knowledge and skills to other industries.

Empirical evidence indicates that the industrial sector tends to be more capital-intensive than the agricultural or services sector. Rostow argues that, in the early stages of economic development, manufacturing industries are not able to produce capital goods needed to increase the capital-labour ratios. They need to import capital goods. Since there is a high capital-labour ratio, wage rates tend to be higher than in other sectors. Furthermore, as income increases, consumers demand more manufactured products. Countries, therefore associate the growth of the manufacturing industry with economic development and growth.

Economists are of the opinion that economic development in developing countries is achieved through manufacturing growth. This manufacturing activity tends to be located in urban areas. As Lewis argues, there are higher wages in the manufacturing industry than in other industries. This is likely to intensify rural urban migration even if there are not enough jobs for all migrants, hence the development of SMMEs.

The growth of the manufacturing industry has its economic and social concerns. It is associated with pollution. Industry causes health hazards by releasing toxic substances into air, land and water. While the manufacturing industry is a necessary component of economic development, its negative externalities have to be reduced.

Most theorists emphasise that investment, whether in the human, physical or economic structure, is significant to economic growth. As Rostow and Lewis suggest, investment in infrastructure, particularly in transportation, is significant in transforming society from the traditional to the modern sector. Neoclassical theorists such as Solow emphasise that technological processes are exogenous while new growth theorists such as Romer argue that they are endogenous.

As common patterns or general tendencies between countries are identified, they emphasise the complex phenomena of growth and development. This is mainly because each country and region has different political, historical, cultural and economic circumstances. The manufacturing industry is promoted in developing countries, because of its characteristics of being able to easily accumulate capital and its association with rising incomes. The manufacturing industry in South Africa, and in the Eastern Cape in particular, has been targeted for development. In the past, investment, which is a significant factor in accelerating manufacturing development, favoured large scale capital-intensive production.

The manufacturing industry possesses characteristics such as externalities and economies of scale that are important for economic growth. This is indicated by the significant changes in production and employment that have occurred in some sub-sectors of the manufacturing industry in South Africa over the past three years. Some labour-intensive sectors have contributed to the increase in production and employment in this industry. South Africa, and especially the Eastern Cape, needs to rise to the challenges facing the critical element of growth, which is the manufacturing industry.

Countries vary greatly in their manufacturing growth performances. The standard of living in developed countries has risen while remaining low in developing countries. Some economists argue that capital formation contributes to rising standards of living. It is the driving force behind economic growth, employment and development of a country. South Korea and Taiwan have a successful growth performance because they have pursued policies that encourage the manufacturing industry.

Empirical evidence shows that capital formation is not the only driving force behind economic growth which leads to growth of employment opportunities. South Africa is a typical example of a country that emphasizes capital mobilization for development. The country uses capital-intensive industries to bring growth. The standard of living is still low and poverty has not been reduced. The South African manufacturing sector has a poor performance record. Countries such Taiwan and South Korea have had a successful growth performance because they use their abundant resources and have produced in a labour-intensive manner. Factors, such as

technological innovations, human capital, labour and physical infrastructure such as roads are becoming important contributors to economic growth. Therefore, economists have to focus on these issues in order to understand the role of the manufacturing industry in securing economic growth.

South Africa and the Eastern Cape province attach more importance to the manufacturing industry because it has the ability to make a greater contribution to economic growth and development than other industries. This, in turn, has to lead to the creation of more employment opportunities. This, in turn, leads to a better life for all South Africans. A top priority of all policy-makers is to create employment. Thus, an industry which contributes to the growth of the economy by creating jobs and generating greater resources in order to improve the quality of life of its citizens is important.

CHAPTER 3

THE MANUFACTURING INDUSTRY IN SOUTH AFRICA

3.1 INTRODUCTION

A critical feature of economic performance has been the inability of the South African economy to create new employment opportunities (Department of Finance 1999:32). The manufacturing industry in South Africa has been the main contributor to the economy's overall growth since the 1960's (Schrire 1992:446). This indicates that the industry has the ability to generate employment and to raise productivity levels in the economy. The industry is seen as the main source of employment (Fourie et al. 1995:129). This is mainly due to the fact that employment in the traditional sectors, such as agriculture and mining have declined significantly. The manufacturing industry in South Africa is currently experiencing difficult times. This is evident from the decline in the industry's employment and output growth since 1996 (Loots 1998:335). The decline is mainly due to factors such as industrial restructuring and weak global demand.

The most important goal in restructuring the manufacturing industry is to promote employment creation which will be advantageous to all South Africans (Central Economic Advisory Service (CEAS) 1993:5). South Africa's transition from isolation has made it possible for the country to adapt industrial policies in order to realise an improved economic growth and employment situation (Schrire 1992:68). These policies include investment in manufacturing projects such as spatial development, industrial clusters and small businesses which can lead to an improvement in the standard of living and quality of life of all South Africans. A growing economy which creates employment and generates greater resources in order to improve the quality of life is, however, vital to any country (CEAS 1993:6).

A high economic growth rate cannot be sustained in South Africa without improving the performance of the manufacturing industry (CEAS 1993:251). This is primarily because the

manufacturing industry has strong backward linkages which are important for growth and development in the economy. According to Chandra (1992:6), the manufacturing industries with backward linkages stimulate production in other sectors. For example, the construction industry uses products from the machinery and metal processing industries. If these industries perform better, they stimulate production in the construction industry.

The objective of this chapter is to provide an overview of the manufacturing industry in South Africa. A meaningful understanding of the manufacturing industry in South Africa requires an analysis of the following key aspects: the location of the manufacturing industry, its historical development, characteristics and performance. The performance of the manufacturing industry is illustrated by the structure of the GDP, output, capacity utilisation, investment, employment, trade and productivity. These aspects are outlined below.

3.2 THE LOCATION OF THE MANUFACTURING INDUSTRY IN SOUTH AFRICA

The process of world industrialization has been geographically selective (Hayter 1997:46). This was mainly due to the fact that the location conditions and factors vary from place to place. According to Natrass (1982:180), the spatial aspects of industrialization, such as transport costs and the close proximity of markets influence the location of the manufacturing industry. These factors contribute to the variable manufacturing growth rates among countries. Historically, countries have associated manufacturing with urbanization. According to Hayter (1997:65), manufacturing investment was concentrated in the cities. As a result, employment opportunities increased in these areas (Hess & Ross 1997:260).

The development of the manufacturing industry in South Africa was affected by measures that restricted property ownership and the mobility of African labour (Schrire 1992:453). Moreover, the South African government intervened in the location decisions of manufacturing in accordance with the policy of decentralisation after 1948. This was done mainly to prevent the influx of African people to the main urban areas, rather than to develop outlying regions (Schrire 1992:453). Furthermore, the import substitution policy meant that the manufacturing

industries tended to be located where the market was, that is, in the larger urban areas. The government, therefore, developed an infrastructure which attracted new manufacturing to these areas (Hayter 1997:65).

According to Bloch & Lewis (1998:732), statistics on the location of the manufacturing industry in South Africa are not consistent and up-to-date. They argue that this problem is not unique to South Africa. Vodacom's service map of its cellular network, however, illustrates that Gauteng, North West province, the Free State, Mpumalanga, Kwazulu-Natal, Western Cape and the Eastern Cape are important manufacturing provinces in South Africa. The latest available census of manufacturing statistics indicates that the Gauteng province contributed 43 per cent to the total manufacturing output the country in 1991 (Bloch & Lewis 1998:732). It is followed by Kwazulu-Natal which contributed 21 per cent. The Western Cape, Eastern Cape, Mpumalanga, Free State and North West province respectively contributed 14 per cent, 8 per cent, 7 per cent, 4 per cent and 2 per cent to manufacturing output while both the Northern Cape and the Northern Province contribute 1 per cent each. These differences further indicate that manufacturing production in South Africa is unevenly distributed as in the rest of the world.

Manufacturing activity in South Africa is largely concentrated in the metropolitan or large urban areas (Schrire 1992:471). In developing countries, industrial activity occurs mainly in the capital city regions (Bloch & Lewis 1998:737). They argue that these areas have the infrastructural capacity to cope with manufacturing activity. This is shown in the disproportionate share of manufacturing output and employment. The Gauteng province contributes 39 per cent to manufacturing's share of employment. The East Rand, Johannesburg, Pretoria, the Vaal Triangle and the West Rand, however, respectively contribute 16 per cent, 10 per cent, 6 per cent, 4 per cent and 3 per cent to Gauteng's manufacturing employment (Bloch & Lewis 1998:733). This is followed by Kwazulu-Natal and the Western Cape, contributing 24 per cent and 17 per cent respectively to manufacturing employment.

According to Nattrass (1982:182), the concentration of economic activity in South Africa is

a matter of concern. These concerns include the fact that the Gauteng area has a water supply problem. There is fear for the safety of South Africa's industrial capacity if the environment deteriorates in terms of its strategic vulnerability. The growth of migrant labour, and its social cost, also undermines the security of the state (Nattrass 1982:183). This is reflected in the difference in the living standards of the various population groups. Consequently, in 1960, the South African government encouraged the location of industries in 'border areas' rather than in the independent national states. Today, the government recognises the importance of manufacturing industries in places where the potential exists for employment growth (Jordan 1998:717).

The government can and does influence the location of manufacturing activities by using industrial estates (Jordan 1998:717). Governments, including that of South Africa, have recently developed Spatial Development Initiatives (SDIs) to create growth and development in areas with underutilised economic potential. This is done by creating an investor friendly environment in order to stimulate domestic and international investment. In South Africa, the SDI's include the Maputo Development Corridor, the Richards Bay, Saldanha Steel, Coega, Fish River and the Wild Coast projects. In order for these projects to succeed, they have to support employment creation, development of SMMEs and community participation. According to Bloch & Lewis (1998:747), the Saldanha Steel project took into account these endogenous factors in its development. Furthermore, the Coega project in Port Elizabeth in the Eastern Cape has made use of local interest groups, human and physical capital and technology (Driver 1998:805). This supports the theories that argue that exogenous and endogenous factors contribute to growth and development.

Manufacturing activity is further strongly related to the absolute size of the economic capacity of a district (Nattrass 1982:181). Consequently, 56 per cent had an industrial capacity large enough to contribute 20 per cent to total output in the wealthiest districts. In the poorest districts, which included the homelands, only 4 per cent had an industrial capacity (Nattrass 1982:181). Of the 272 administrative districts, including 263 magisterial districts and 9 African homelands only 54 had an industrial capacity large enough to enable industry to contribute 20 per cent of the district's total output in 1980.

A further important feature of the location of the manufacturing industry in South Africa is that firms tend to locate to areas in which other firms are already situated (Natrass 1982:180). This is done to enjoy the benefits of external economies. According to Natrass (1982:180), an external economy is a factor which enables a firm to lower its costs of production but over which it has no direct control. Examples of benefits includes the ability to draw on a pool of relatively skilled labour already in the area and the existence of a wider range of social services.

The industrial policy of South Africa is in the middle of an historic change in direction (ANC 1997:50). The government realises that if the population grows without the economy growing, standards of living and employment cannot increase. This means that economic growth and employment growth are of significant importance to the development of a country. The manufacturing industry, which is the main contributor to the country's growth, has the ability to achieve these objectives (Schrire 1992:446). In fact, the deteriorating employment conditions in agriculture and mining have led to a shift in the objectives of manufacturing development towards a concern to provide long-term improvements in the employment and wealth creation in South Africa. This involves using existing knowledge, skill, technology and natural resources efficiently and effectively (Yadavalli 1998:412).

3.3 HISTORICAL DEVELOPMENT OF THE MANUFACTURING INDUSTRY IN SOUTH AFRICA DURING THE PERIOD 1860-1998

The South African economy was dominated by agriculture until the 1860s (Fourie et al. 1995:123). The only significant mineral production was the mining of copper in Namaqualand. The turning point was the discovery of diamonds in Kimberly in 1870 and the discovery of gold on the Witwatersrand in 1886. These discoveries were instrumental in starting the boom in economic activity which created favourable conditions for manufacturing growth.

The South African economy was still largely based on the exploitation of natural resources when the Union of South Africa was formed in 1910 (Fourie et al. 1995:123). Agriculture accounted for 21,5 per cent of the GDP in 1911, while the manufacturing sector contributed

about 4 per cent (Table 3.1). Table 3.1 shows that this position was reversed, with agriculture accounting for 4,3 per cent and the manufacturing sector contributing 23,7 per cent in 1998. This means that the contribution made by the manufacturing industry was approximately six times more than that of the agricultural sector in 1998. Moreover, this contribution was even more than the contribution made by the agriculture sector in 1911.

TABLE 3.1: PERCENTAGE CONTRIBUTIONS OF DIFFERENT KINDS OF ECONOMIC ACTIVITY TO SOUTH AFRICAN GDP DURING THE PERIOD 1911-1998

	1911	1920	1930	1940	1960	1990	1994	1995	1996	1997	1998
A Kind of economic activity											
Agriculture	21.5	22.7	14.3	12.6	12.4	5.2	5.1	4.4	4.8	4.5	4.3
Mining	27.3	17.5	15.2	19.4	12.7	10.6	8.6	7.8	8.1	7.7	7.8
Manufacturing	4.2	7.4	9.7	12.8	21.0	25.4	23.4	24.2	23.7	23.9	23.7
Trade	12.8	15.6	14.9	13.9	14.2	13.4	15.9	16.2	16.0	16.0	15.9
Financial services	12.8	2.6	2.6	2.8	10.8	14.5	16.5	16.9	17.4	17.9	18.6
General government	5.5	7.1	8.4	10.5	8.6	14.0	15.4	15.2	15.2	15.2	15.4
Other	25.9	27.1	34.9	28.0	20.3	16.9	15.1	15.3	14.8	14.8	14.3
B Sector											
Primary sector	48.8	40.2	29.5	32.0	25.1	15.8	13.8	12.2	12.9	12.4	12.2
Secondary sector	5.9	10.0	13.6	17.1	26.6	33.0	30.6	31.4	30.7	30.7	30.4
Tertiary sector	45.3	49.8	56.9	50.9	48.3	51.2	55.6	56.4	56.4	56.9	57.4

SOURCE: SSA 1992:10; SARB 1999a:107

Table 3.1 further illustrates that the contributions made by the agriculture, mining and the manufacturing sectors to GDP have declined, particularly during the period 1990-1998. The declining trend in the agriculture and mining sectors has been particularly marked since the 1960's. Although the contribution made by the manufacturing sector to GDP has declined, the sector is still the largest contributor to GDP in South Africa (Table 3.1). It has been rising

relative to the agriculture and mining sectors. This indicates that the manufacturing industry has the capacity to generate employment (Hayter 1997:47).

The contribution of the primary sector to the GDP in South Africa declined from 48,8 per cent to 12,2 per cent during the period 1911-1998 (Table 3.1). The decline was caused by factors such as weak global demand, overvaluation of the currency, and slow world economic growth. The contributions of the secondary sector to GDP have increased from 5,9 per cent in 1911 to 30,4 per cent in 1998. The tertiary sector contributions increased from 45,3 per cent to 57,4 per cent during the period 1911-1998. This shows that the pattern of economic development followed by South Africa has been a shift out of the primary sector to the secondary and tertiary sectors.

World War I provided a great stimulus for certain South African manufactured consumer goods. The country was cut off from its traditional sources of manufactured goods. This provided an incentive to local manufacturing industries to manufacture their own commodities. After World War I, some goods were produced from imported raw materials, because importation was easier. For example, clothing manufactured from imported textiles preceded the growth of a textile industry by many years. This occurred despite the fact that South Africa was a major producer of wool (Houghton 1976:127).

According to Nattrass (1982:163), the history of industrialization in South Africa began in the early 1920's. Industrialisation was strengthened by the rise to power of the Pact government. This government realised the importance of diversifying the South African economy away from its dependence on agriculture and gold mining. This was mainly due to the belief that gold and other mineral resources had a limited life-span. During the 1920's and early 1930's, South Africa embarked on an industrialization strategy based on import substitution. This strategy comprised three important actions: Firstly, the establishment of the Board of Trade and Industry in 1921 to execute the government's import policy. Furthermore, the Board had to enhance industrial development through the granting of selective tariff protection. Secondly, the establishment of Eskom in 1922 as a public corporation to supply electricity. Lastly, the establishment of Iscor as a public corporation in 1928 to meet the demands of the steel

industry.

The period 1933 to 1951 presented a great challenge to the South African manufacturing industry (Houghton 1976:126). During this time there was an increase in the consumption of products produced by the South African manufacturing industries. Increases in output in any sector come from one of three sources, namely, the increased input of the factors of production into the sector, the improved usage of the factors already employed or from a combination of these two resources (Nattrass 1982:166). Consequently, capital accumulation has been of significant importance to the growth of output in the South African manufacturing industry. According to Nattrass (1982:167), 78 per cent of investment went towards creating new jobs and 12 per cent towards labour productivity during the period 1939-1951.

A further significant development during the World War II period was the establishment of the IDC in 1940 (Nattrass 1982:164). This is a public corporation which advances risk capital to private manufacturing concerns. The IDC played a major role in establishing new capital-intensive industries such as Sasol and helped to ensure balanced industrial development.

During the period 1940-1960, the share of manufacturing in GDP rose from 12,8 per cent to 21 per cent. This growth in output contributed to economic growth (Fourie et al. 1995:659). Furthermore, manufacturing growth was based on local production of previously imported consumer goods by the multinational industries. These industries had previously exported to South Africa. These firms supplied the knowledge, skilled labour, foreign entrepreneurs and capital required to establish new manufacturing industries. This situation caused structural changes in the economy (Nomvete 1993:10). Moreover, it provided scope for an improved standard of living.

It became clear that the contribution of the import substitution approach to economic growth and industrial development was diminishing by the late 1960's and early 1970's (Schrire 1992:453). This was shown by the significant anti-export bias and greater dependence on imports of capital goods during the same period (Haines 1996:30). Manufacturing growth declined mainly because of income inequalities and less demand for goods. New sources of

growth had to be pursued over and above the growth in the domestic market. The Reynders Commission of Enquiry (1972) into trade and industrial policy was consequently set up (IDC 1995a:11). This Commission recommended that greater emphasis be placed on export development as the driving force for industrial development in 1972 (Nattrass 1982:164). Examples of export incentives include tax concessions, import duty rebates and cash grants to exporters. Countries such as Korea and Taiwan adopted export-oriented policies which gained momentum in the early 1970s. South Africa was unable to benefit from export-oriented policies, because of international isolation and overvaluation of its currency. This was to the detriment of the development of manufactured exports and the competitiveness of its economy (Schire 1992:448).

A series of events occurred which led to industrial stagnation during the period 1970-1990 (IDC 1995a:3). These events include the increase in capital-intensive production, the abolition of job reservations, sanctions, political and social instability, poor savings, the extension of trade union rights to Blacks and the regional industrial development policies which distorted location decisions. These policies inhibited the establishment of labour-intensive industries in metropolitan areas. This led to the overvaluation of the currency which depressed manufacturing growth and exports, and accelerated inflation (IDC 1995a:3).

The international oil crisis of 1973 and structural changes in international trade contributed to the reduction of exports of manufactured goods in South Africa (Naudé & van Heerden 1992:137). This effect was reflected in price increases of imported machinery. The structural changes in international trade include a shift away from agricultural products, metals and textiles towards bio-technology and micro-electronics (Naudé & van Heerden 1992:138).

The General Export Incentive Scheme (GEIS) was introduced during 1990 (Hanival & Hirsch 1998:38). Its objective was to encourage firms to export and to intensify the previous export promotion policies. It paid a cash subsidy to exporters on the basis of the level of value added and local content. The GEIS was discontinued in 1997. A new industrial policy called the Growth, Employment and Redistribution (GEAR) strategy was introduced in June 1996. The aim of this strategy is to look at measures that increase value added in manufacturing

production. These measures include investment incentives, promotion of SMMEs, human resource development and technology enhancement (IDC 1997:5). The strategy stresses the objectives of industrial development, namely, productivity, employment, competitiveness and export.

Sanctions were lifted during the period 1993-1994 (Harnival & Hirsch 1998:4). This brought life to the manufacturing industry. Production in this industry became strong, as both export and domestic demand were strong. During 1996, the growth rate of the manufacturing industry fell partly due to tariff liberalisation. Tariff liberalisation forced manufacturers to restructure their production processes in order to increase competitiveness in the domestic market. This market was increasingly contested by international producers. During 1997, the growth rate of the manufacturing industry regained its momentum but fell during 1998 (SARB 1999a:107). This was mainly due to slow world economic growth and uncertainty regarding the future economic prospects in South Africa.

3.4 CHARACTERISTICS OF THE MANUFACTURING SECTOR IN SOUTH AFRICA

One of the most important characteristics of the manufacturing sector in South Africa is the increasing capital intensity of production. The capital intensity of production refers to the amount of capital required to produce each unit of output (Fourie et al. 1995:140). An indication of capital intensity is the increase in the capital-labour ratio. According to Schrire (1992:454), increases in the capital intensity of production are an outcome of the changing industrial structure. This was a phenomenon of the 1970s and the 1980s. In terms of social welfare, the growth in capital intensity is undesirable in a country where labour is abundant and capital is scarce (Schrire 1992:455). Furthermore, the increase in capital per worker does not produce an increase in productivity. An increase in productivity is often driven by increasing returns to scale. Although fixed capital per worker in the manufacturing industry increased by 10,4 per cent, output per worker increased by only 29,5 per cent and output per unit of capital fell by no less than 32,3 per cent during the period 1970 - 1986 (CEAS 1993:24). The composition of South Africa's stock of capital in manufacturing rose from 12,1

per cent in 1991 to 14,3 per cent in 1997 (SARB 1999a:122).

During the period 1925-1985, heavy industry dominated manufacturing production, increasing its manufacturing share of GDP from 36,4 per cent to 64,3 per cent (Schrire 1992:453). During the period 1990-1994, this share of manufacturing declined to 62 per cent, but rose slightly during 1994-1997 to 62,5 per cent (IDC 1997:2). Furthermore, the dominant position of heavy industry can be attributed to the diminishing contribution of the import substitution strategy that was prominent in the early 1970's. This can further be attributed to the unequal distribution of income which affects the demand for the products of heavy industries. According to Schrire (1992:453), if there is an unequal distribution of income the production focuses on the needs of the affluent. For example, the demand for and production of luxury goods such as motor vehicles and expensive durable goods receives preference over the basic needs for food and shelter of the poor.

Negative productivity growth for heavy and medium industry was protected and subsidised by government policy (Hatty 1991:28). This indicates underutilisation of capital in those industries. According to Du Plooy (1988:89-91), declines in productivity are largely concentrated in the period after 1981 and are based on factors such as a lack of skilled personnel, increase in labour unrest, lack of competition, political factors, small market size and high inflation. The South African government expanded industrialization via export-led growth and, at the same time, overprotected and subsidized capital intensive industries in the early 1970's (Schrire 1992:456). This led to the economic and social decline during the 1980's. A part of this development was mainly due to the adverse external conditions affecting South Africa, mainly because of its apartheid policy (Schrire 1992:456).

A further characteristic of the manufacturing sector in South Africa is the high average propensity to import (Schrire 1992:455). This is attributable to a large dependence on imported capital and intermediate goods. These goods accounted for 84,8 per cent of total imports during 1993 (Fourie et al. 1995:143). High import propensities indicate that import replacement did not significantly contribute to the production of capital goods. According to Black (1991:19), production of capital goods requires an export market, because the domestic

market is too small to reap the benefits of specialisation and economies of scale.

The manufacturing industry in South Africa is further characterised by high levels of concentration (Joffe et al. 1995:63). This means that the industry is dominated by a few large firms that are interdependent. These firms have to take into account the behaviour of competitors in that they may co-operate or compete with one another. In South Africa, the level of concentration of power in this industry is higher than that of the United Kingdom and France (Mayer & Zarenda 1992:247). According to Joffe et al. (1995:140), high levels of concentration inhibit international competition in domestic markets and domestic competition in international markets. Moreover, high levels of concentration in manufacturing industries in South Africa inhibit technological development and capacity.

3.5 THE PERFORMANCE OF THE MANUFACTURING INDUSTRY IN SOUTH AFRICA DURING THE 1990s

The manufacturing industry in South Africa, as defined by the SSA (quoted by IDC 1998:2), has 27 major manufacturing groups. During the 1970s, the industry experienced a decline in growth. This was mainly attributed to the decline in world manufacturing growth, technology, the industrial import substitution policy, and international sanctions (IDC 1995a:3). The manufacturing sector has grown since 1993 (SARB 1999a:132). Its performance slowed down during the second half of 1997. It recovered slightly during the second quarter of 1998. The performance of the manufacturing industry, however, fell sharply in the first and fourth quarters of 1998 (SARB 1999a:4). The slower growth is largely attributed to slow economic activity in the primary sectors of the economy. Moreover, slower world growth and uncertainty regarding the future economic prospects in South Africa also contributed to the slower growth (IDC 1998:6). The value added by the manufacturing sector increased by approximately 3 per cent during the period 1996-1998 (IDC 1998:10). This was due to the liberalisation of tariffs during 1995. Furthermore, liberalisation of tariffs increased the competitiveness of the manufacturing sub-sectors.

The South African government produced the GEAR strategy in order to place the country on

a new path and to ensure a fast-growing economy (Nomvete et al. 1997:19). GEAR is expected to create greater employment opportunities, ensuring a better life for all South Africans, a safer environment and productive workplaces (Nomvete et al. 1997:19). According to the ANC (1997:5), the GEAR strategy strives to create the desired growth by changing the economy to increase the production of non-gold exports. These exports are estimated to be more than 10 per cent of GDP by the year 2000. It further provides measures such as the tax holiday scheme which encourages new investment in manufacturing and industrial development. These optimistic expectations may, however, not be realised considering the record of the GEAR policy.

3.5.1 Criticism of the performance of the manufacturing industry in South Africa

The manufacturing industry in South Africa was often stimulated by large-scale investment in capital-intensive industries in the past. Specific industries producing for the local market were granted high levels of protection. According to Fourie et al. (1995:667), large-scale industrial activity on its own was inappropriate in South Africa, mainly because capital and skilled labour were in short supply. South Africa used the experiences of developed countries such as Japan in skilled labour (CEAS 1993:257). Today, the focus of manufacturing activity includes SMMEs. SMMEs are relatively more labour-intensive than large manufacturing industries (Fourie et al. 1995:615). They are better suited to local conditions and can contribute to increased employment.

A pattern of development common to all countries is that the contribution of the primary sector to the GDP of a country declines, while that of secondary and tertiary sectors increases (Cohen & Zysman 1987:1). Although South Africa also followed this pattern, the secondary sector was developed according to international trends (CEAS 1993:256). This means that methods of production changed from natural-resource-intensive to knowledge and skill-intensive production. Furthermore, labour was substituted for capital, resulting in low levels of employment and development. Today, many developing countries such as South Korea and Taiwan have large manufacturing industries because they are part of the globalisation process (Nomvete et al. 1997:62).

The ratio of the secondary sector employment to total employment is declining in South Africa (Department of Finance 1999:45). This means that employment provided by the manufacturing industry has to be increased in order to absorb the large and growing labour force. According to the CEAS (1993:261), the manufacturing industry has the capacity to generate jobs.

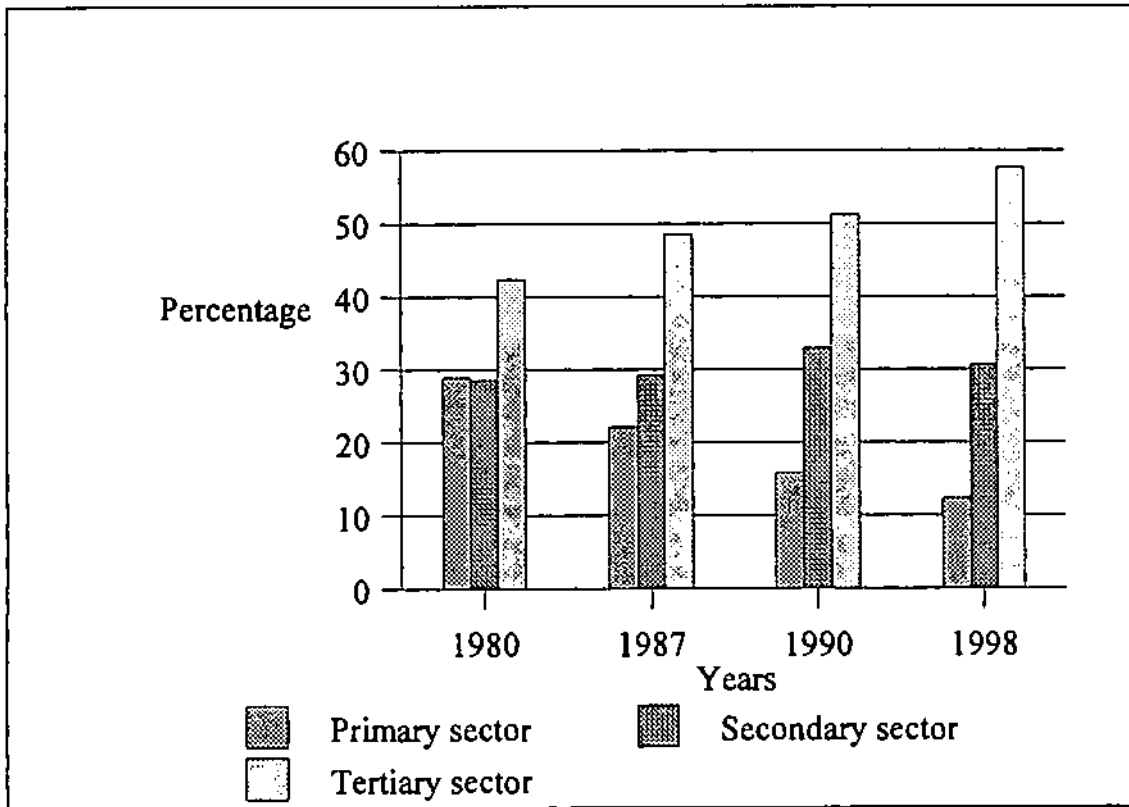
South Africa's imports consist mainly of secondary sector products (CEAS 1993:257). The manufacturing sector is highly dependant on imports. This means that as the sector grows, imports have to grow. These imports have to be paid for in foreign currency which can be obtained by exporting (Fourie et al. 1995:501). Moreover, if there is little foreign currency, the rand depreciates, leading to high import prices which are not viable for economic growth and development in South Africa. The Sasol project in South Africa, however, did not reduce imports because it required investment in capital goods (Hanival & Hirsch 1998:12).

3.5.2 The changing structure of the manufacturing sector in South Africa

The structure of the manufacturing industry in South Africa has undergone many changes in recent years. This is shown by the relative contributions made by the primary, secondary and tertiary sectors to the GDP (Nomvete 1993:55). Figure 3.1 shows that the contribution of the primary sector declined rapidly during the period 1980-1998. The decline was caused by accelerated inflation and the increase in capital intensity in the economy. According to Nomvete (1993:64), the structural change which has taken place in the manufacturing industry in South Africa is the growth of capital-intensive industries. This led to the creation of less employment opportunities.

During the period 1980-1990, the contribution made by the secondary sector to the GDP of South Africa increased from 28,6 per cent to 33 per cent (Figure 3.1). According to Townsend & Van Zyl (1998:210), the manufacturing industry was the fastest growing industry. Its average annual growth rate was 6,45 per cent per year. The increase in the contribution made by this sector was caused by factors such as the increase in demand for goods and manufacturing output growth. This contribution declined from 33 per cent to 30,4 per cent during the period 1990-1998.

FIGURE 3.1: THE CONTRIBUTIONS OF THE THREE SECTORS TO GDP IN SOUTH AFRICA FOR THE PERIOD 1980 - 1998



SOURCE: SARB 1988:83; 1999a:107

The decline was mainly caused by factors such as international isolation, an overvalued currency, tariff liberalisation and the restructuring of the manufacturing industry (Hanival & Hirsch 1998:4). This contribution is the same as the contribution made by this sector 12 years ago. This means that the contribution made by the secondary sector has been static over the last decade.

Figure 3.1 further shows that the contribution of the tertiary sector to GDP in South Africa has increased over the years. During the period 1987-1990, the increase in this sector was not as large as that of the secondary sector. This increase was mainly due to sustained growth in financial services (Hanival & Hirsch 1998:6).

Changes in the secondary sector indicate that structural changes are taking place in the economy (Fourie et al. 1995:656). These include the use of high technological manufacturing, the lifting of sanctions during 1993-1994 and the liberalization of tariffs in 1995. These changes have increased the competitiveness of this sector. The foundation for sustainable growth in the economy has, therefore, been laid by the secondary sector, especially that of the manufacturing industry.

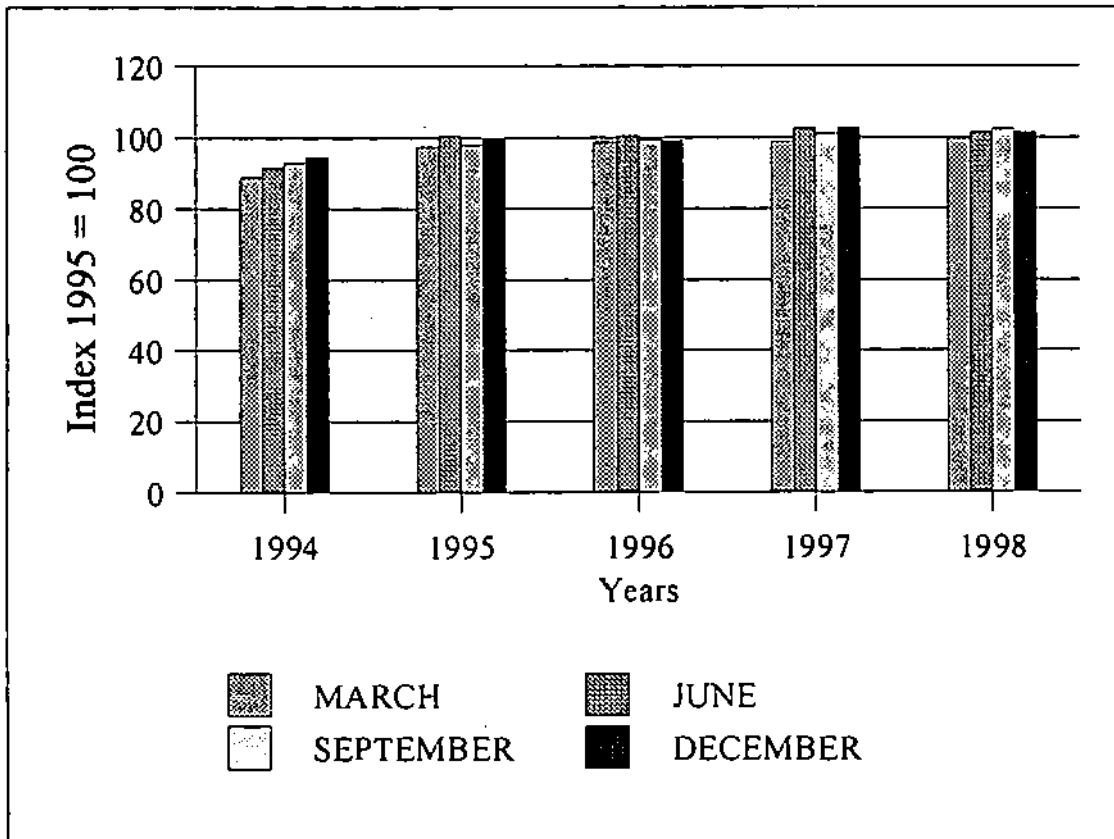
The contribution of the primary sector to GDP in South Africa is smaller than that of the secondary and tertiary sectors. This is an expected development because empirical evidence shows that as countries industrialise, the importance of the secondary sector, especially the manufacturing industry, increases at the expense of the primary sector. The decline in the contribution made by the secondary sector, especially the manufacturing industry to GDP, however, is worrying. This was mainly because it has had a negative effect on economic development and the creation of employment (CEAS 1993:256).

3.5.3 The physical volume of production in the manufacturing sector in South Africa

According to Joffe et al. (1995:6), the growth of the manufacturing sector in South Africa was sustained during the early 1970's. During the period 1974-1981, production rose by 5,3 per cent per annum but has fluctuated since 1982. This was mainly due to the overvaluation of the rand which also depressed competitiveness in the industry. During the period 1994-1995, manufacturing production increased, but remained the same during 1996 (Figure 3.2). Production regained momentum and showed a growth rate of 3,3 per cent during the second quarter of 1997 (IDC 1998:6). Moreover, fabricated metal products and basic iron and steel products have been the most significant contributors to the overall increase. These industries are responsible for the high level of concentration of manufacturing in Gauteng. The Gauteng province made the largest contribution of 43 per cent to total manufacturing production during 1990 (Bloch & Lewis 1998:733). The machinery, electrical machinery, chemical products, leather, metal products and furniture industries, however, also contributed to the increase in manufacturing production during 1997 (IDC 1998:14). The metal and furniture industries, which are relatively labour-intensive, also contributed to an increase in manufacturing

production.

FIGURE 3.2: PHYSICAL VOLUME OF MANUFACTURING PRODUCTION IN SOUTH AFRICA FOR THE PERIOD 1994 - 1998.



SOURCE: SARB 1999a:132

As illustrated in Figure 3.2, the volume of production was static during 1995 and 1996 but rose slightly in 1997. The strong growth in output volumes of leather products was largely attributed to the export performance of motor vehicle components, specifically car seat covers, which has been encouraged by the Motor Industry Development Programme (IDC 1997:9). Manufacturing production showed a decline during the third quarter of 1997 and the first and the last quarter of 1998 (IDC 1998:6). This was mainly due to the decrease of -0,5; -0,4 and -0,3 per cent respectively of the machinery, basic chemicals and iron and steel industries.

During the third quarter of 1997, the decline in output was attributed to the food processing

industry (IDC 1998:6). This is one of the largest employer of manufacturing industries predominantly located in Gauteng, Kwazulu-Natal, Eastern Cape and the Western Cape. The clothing, footwear, printing and publishing sectors, as well as the sector producing glass products, had a combined negative impact of about 0,6 percentage points on overall manufacturing output growth in the first and fourth quarters of 1998 (IDC 1998:6).

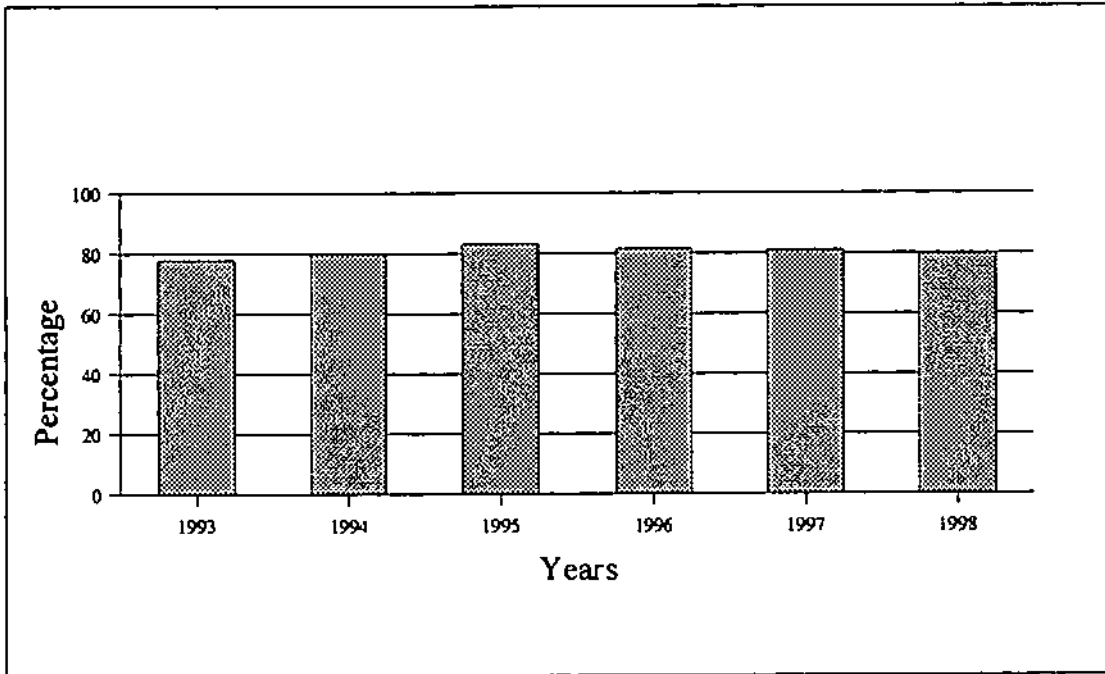
The decrease in manufacturing production in the last quarter of 1998 reflects the weak demand for South African manufactured products. This shows that no meaningful economic growth was achieved during 1998. This, in turn, reduced the level of employment. According to the Department of Finance (1999:32), stronger growth is needed to achieve employment recovery. However, production in the manufacturing sector in South Africa rose in the second quarter of 1999 (SARB 1999c:6). This was mainly due to an increase in international demand for South African manufactured goods.

The slight recovery in the manufacturing sector was mainly caused by the clothing, footwear, chemical, machinery and transport equipment sub-sectors in 1999 (SARB 1999:5). This shows that there are labour-intensive industries which can contribute to the growth of manufacturing production. More employment opportunities can be created for the abundant labour in the country in this way. Since the manufacturing industry has the capacity to expand production, it has to be targeted for development (Department of Finance 1999:32).

3.5.4 The utilisation of production capacity in the manufacturing sector in South Africa

During the period 1993-1995, the utilisation of production capacity in the manufacturing sector increased from 77,9 per cent to 83,3 per cent due to the increase in output (Figure 3.3). Since 1995, capacity utilisation in the manufacturing industry has been declining due to the decline in manufacturing output (SARB 1999a:132). According to the CEAS (1993:54), the optimal capacity utilisation rate is 98,5 per cent. The manufacturing industry in South Africa did not attain this percentage during the period 1993-1998. This means that the production capacity of this industry is under-utilised and there is a lack of demand.

FIGURE 3.3: THE UTILISATION OF PRODUCTION CAPACITY IN THE MANUFACTURING INDUSTRY IN SOUTH AFRICA FOR THE PERIOD 1993-1998.



SOURCE: SARB 1999a:132

Empirical evidence shows that the manufacturing industry in South Africa has reflected a tendency to utilise more capital-intensive production techniques. This was mainly due to changes in production structure, costs of labour and capital and technology (Fourie et al. 1995:612). The decline in the utilisation of production capacity indicates a decrease in economic growth and employment in the industry.

During 1995, the basic iron and steel and fabricated metal products industry contributed to the increased volume of production due to the increase in utilisation of capacity (IDC 1998a:6). The sectors producing rubber products, transport equipment, footwear and clothing, as well as the printing and publishing industries operated at a higher capacity during 1997 (IDC 1998a:6). Furthermore, beverages and motor vehicles, parts and accessories operated at a lower capacity during the same year.

Figure 3.3 further shows that the utilisation of production capacity in the manufacturing sector remained static during 1997-1998. This shows that manufacturing activity does not grow smoothly. Changes in the economic activity have an impact on the utilisation of production capacity in the manufacturing sector (Fourie et al. 1995:647). Changes in manufacturing production took place in the supply, institutional and demand areas of manufacturing (Nomvete 1993:7-9). Supply changes are changes in the resources required to produce products. Institutional changes influence the environment. For example, government policies, social stability and international relations. Demand changes cause a change in the demand for production. These changes have an effect on economic growth and employment.

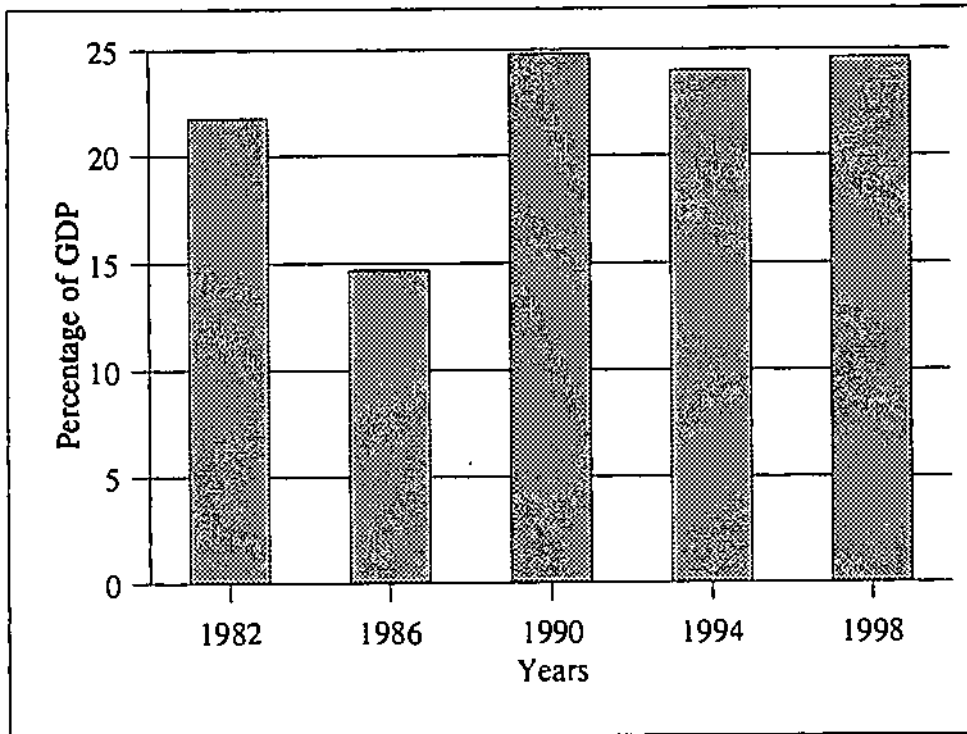
According to the CEAS (1993:54), the manufacturing sector in South Africa has some structural problems. These include the political transition of the 1990s, low education levels and shortages of skilled labour of workers. In order to increase the utilisation of the production capacity in the manufacturing sector, the quality and quantity of natural resources, capital and labour have to increase (Fourie et al. 1995:651). Moreover, these changes can lead to an increase in manufacturing, which in turn, may lead to further economic growth and employment.

3.5.5 Investment in the manufacturing sector in South Africa

Investment in South Africa has developed out of an industrial structure that favoured large-scale, capital-intensive and natural resource based production (Hanival & Hirsch 1998:21). The RDP and GEAR strategies, however, highlight the fact that more labour-intensive investment has to be considered. This encourages the creation of employment opportunities (Hanival & Hirsch 1998:16).

Investment levels in the manufacturing sector in South African were satisfactory during the early 1970's. Although manufacturing levels have been low since 1982, they have been somewhat higher than in other sectors (Joffe et al. 1995:10). This was mainly caused by the poor demand for goods and international isolation. The amount of resources invested was below 25 per cent of GDP during the period 1982-1998 (Figure 3.4).

FIGURE 3.4: INVESTMENT IN MANUFACTURING AS A PERCENTAGE OF GDP IN SOUTH AFRICA FOR THE PERIOD 1982-1998.



SOURCE: SARB 1999a:115

Figure 3.4 shows that there was an increase in investment due to the increase in the share of manufacturing to GDP in South Africa during the period 1986-1990. Investments declined thereafter, because South Africa was internationally isolated. This meant that South Africa was unable to finance the desired investments and there was a limited demand for South African products. During 1995, investments regained momentum and increased because sanctions were lifted during the period 1993-1994 (Hanival & Hirsch 1998:4). This meant that South Africa was able to gain access to the international markets. Moreover, the strong export and domestic demand, which resulted in manufacturing growth, contributed to increased investments.

The IDC facilitated manufacturing investment which raised the country's export capacity during the period 1997-1998 (Department of Finance 1999:30). Projects such as Telkom's

Vision 2000, the Saldanha Steel project and SMMEs made a contribution to domestic investment (Hanival & Hirsch 1998:13). The government's supply-side incentives such as the reduction of corporate tax rates, and the relaxation of foreign exchange control further stimulated foreign direct investments. Manufacturers have continued to enhance their competitiveness and maintained profitability although the investment in the manufacturing sector was higher in 1998 than in 1990 (IDC 1998a:7).

Investment in the manufacturing sector in South Africa is of significant importance to growth and development (Nomvete et al. 1997:5). Empirical evidence shows that high investment is associated with fast growth. The endogenous theory argues that an increase in human capital, accompanied by the right kinds of investment in physical capital, raises economic growth (Economist 1996:29). The decline in economic growth and the increase in investment in capital-intensive production techniques have contributed to unemployment in South Africa. In order to create employment opportunities, new manufacturing investment needs to include investment in knowledge, skills of the growing population and in infrastructure (Joffe et al. 1995:19). This development can attract both domestic and international investment (Hanival & Hirsch 1998:35).

3.5.6 Employment in the manufacturing sector in South Africa

Employment in the formal sector is presently declining in South Africa and in many other developing countries (Fourie et al. 1995:128). People are being replaced by machines. This often results in production rising without a rise in employment. The decline in employment in the manufacturing industry in South Africa is mainly caused by structural changes (Fourie et al. 1995:611). These changes include a lack of education, training or skills required to obtain the job, production techniques and a lack of economic growth coupled with rapid population growth. According to Nomvete et al. (1997:63), employment creation has to occur in the manufacturing industry. This industry has the capacity and the strength to do so (Tables 3.2 & 3.3). Moreover, it is an important contributor to economic growth (Table 3.1).

Manufacturing employment in South Africa was static during the period 1970-1980 (Table

3.2). It declined from 29 per cent to 28 per cent during the period 1980-1990 (Table 3.2). Employment in the manufacturing industry regained its momentum during the period 1990-1995 (Tables 3.2 & 3.3). This was caused mainly by the lifting of sanctions during the period 1993-1994 (Hanival & Hirsch 1998:16). Manufacturing employment has been declining since 1995 (Table 3.2). The manufacturing industry, however, contributes more to employment than mining, construction and trade industries (Table 3.2). Moreover, this industry is a major source of income and state revenue from which the socio-economic services, upliftment programmes and other services can be financed (CEAS 1993:8).

Table 3.2 further shows that private sector employment in South Africa declined from 75 per cent to 65 per cent during the period 1970-1997. During this same period, however, the manufacturing industry provided most employment opportunities in the private sector. This shows that the manufacturing industry has the capacity to generate jobs. It also stimulates growth and development (Jordan 1998:717). Public sector employment increased from 25 per cent to 35 per cent during the period 1970-1997 (Table 3.2). This indicates a structural problem because the public sector relies on tax revenues which do not contribute to economic growth (Table 3.4). This problem is further shown by the decline in manufacturing employment during 1998 (Table 3.2).

TABLE 3.2: THE DISTRIBUTION OF EMPLOYMENT IN NON-AGRICULTURAL SECTORS IN SOUTH AFRICA FOR THE PERIOD 1970-1998.

Sector / Percentage per annum	1970	1980	1990	1995	1996	1997	1998
Mining	18	17	15	11	11	11	8
Manufacturing	29	29	28	29	28	27	25
Construction	9	8	8	7	6	6	5
Trade	15	14	14	13	14	15	15
Private Services	4	5	6	6	7	6	6
Total: Private sector	75	73	71	66	66	65	61
Public authorities	25	27	29	34	34	35	34

SOURCE: SARB 1988a:104; 1999a; 1999c:130; 1999c:132 respectively.

Table 3.3 illustrates that the share of the primary sector in total employment has declined more than its contribution to GDP. The share of the secondary sector to total employment remained more or less constant over the years. According to Lewis (1954), as quoted by Todaro (1994:74), this sector has to compensate for the loss of employment opportunities in the primary sector. Although employment in the tertiary sector has grown, this growth has not been sufficient to absorb the increasing number of unemployed (CEAS 1993:258).

TABLE 3.3: DISTRIBUTION OF FORMAL SECTOR EMPLOYMENT OPPORTUNITIES PER KIND OF ECONOMIC ACTIVITY FOR THE PERIOD 1990-1996.

Sector / Percentage	1990	1991	1992	1993	1994	1995	1996
Agriculture	10.97	11.07	11.14	11.20	11.17	11.05	10.96
Mining	9.32	8.99	8.42	8.05	7.97	7.81	7.43
Manufacturing	19.44	19.26	18.94	18.77	18.98	18.98	19.27
Electricity	1.12	1.07	1.04	0.97	0.93	0.92	0.95
Construction	5.78	5.51	5.35	5.44	5.36	5.25	4.77
Trade	12.50	12.38	12.45	12.40	12.00	12.17	12.13
Transport	5.39	5.21	5.11	4.70	4.41	4.51	4.46
Finance	5.50	5.61	5.80	5.98	6.09	6.21	6.37
Community Services	3.92	3.90	3.99	4.07	4.13	4.14	4.17
Government Services	16.29	17.13	17.84	18.45	18.99	19.13	19.61
Domestic Services	9.76	9.86	9.92	9.97	9.96	9.84	9.87
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

SOURCE: SSA 1999:P1101

According to Jordan (1998:717), employment growth is an important challenge facing South Africa. Employment has been stagnant mainly because of the capital-intensive methods of production used. According to the CEAS (1993:42-43), strikes and stayaways are some of the factors that contributed to the process of capital deepening. Table 3.3 further illustrates that employment in the manufacturing industry declined during the period 1990-1993. The decline was due to the fact that South Africa was internationally isolated and its products were not in

demand. Employment depends on the demand for goods and services (Barker 1992:59). If there is more demand for goods, employment increases. The demand for manufacturing products and production increased as South Africa gained access to international markets during 1994-1995.

Historically, developing countries are dependent on agriculture (Todaro 1994:37). He argues that the contribution made by the manufacturing industry to GDP of these countries is greater than the one made by the agricultural sector. That is, the contribution made by the manufacturing and agricultural sectors to GDP of developing countries was 38 per cent and 19 per cent during 1990 (Todaro 1994:37). The contribution, however, made by the manufacturing industry to employment does not exceed the one made by agriculture (Todaro 1994:37). That is, the contribution made by the manufacturing and agricultural sector to employment was 12 per cent and 70 per cent during 1990 (Todaro 1994:37). This shows that manufacturing employment exceeds output. In African countries such as Kenya and Tanzania the percentage of the labour force employed in agriculture is more than that of the manufacturing industry (Todaro 1994:37). For example, the percentage of the labour force employed in the agriculture and manufacturing industry in Kenya was 81 per cent and 7 per cent during 1990 (Todaro 1994:37). According to Hayter (1997:69), the share of manufacturing employment among other developing countries such as China, Taiwan and Singapore is increasing.

The percentage of the labour force employed in the manufacturing industry in developed countries is more than that employed in the agricultural industry (Todaro 1994:37). For example, the percentage of the labour force employed in the manufacturing and agriculture industries in the United States was 18 per cent and 3 per cent respectively during 1990 (Todaro 1994:37). According to Hayter (1997:426), these countries were able to absorb surplus workers from the agricultural sector into the manufacturing sector. Moreover, employment in the manufacturing sector has declined while it is increasing in the services sector. Despite this, the manufacturing industry in developed countries is seen as the creator of wealth because it is closely integrated with the services and the primary sector (Chandra 1992:2).

Most countries are faced with the problem of creating employment opportunities, especially for the young population (Hayter 1997:73). Hayter argues that countries that can generate wealth and innovative activities from the manufacturing sector are able to redistribute income and create employment. In this way, the manufacturing industry is a significant contributor to growth (Hayter 1997:71).

Employment in the manufacturing industry declined since 1996 (Table 3.2). This is partly due to a slowdown in economic activity, tariff liberalisation and weak domestic demand (Hanival & Hirsch 1998:4). The tariff liberalisation led to more competition which meant that South African manufactures had to restructure their production processes in order to be able to compete with international producers. The rapid development of new technology and general uncertainty regarding the future economic prospects of South Africa are further factors which caused employment in the manufacturing sector to decrease (Loots 1998:335).

Table 3.4 shows that in contributing to economic output, the manufacturing industry uses relatively more labour than the trade and private service industries. This means that the manufacturing industry has the capacity to absorb labour and contribute to economic growth. This corresponds with the theories which outline the importance of the manufacturing industry.

During 1997, large employers such as the textile and motor vehicle industry, machinery and equipment manufacturers, and iron and steel producers recorded significant job losses (IDC 1998a:8). During the same year, the food processing, clothing, wood and plastic products, furniture and non-ferrous metal products industries experienced an increase in employment.

The manufacturing industry was the second most important contributor to aggregate employment during 1997 (Table 3.4). It employed 27 per cent of the total number of non-agricultural employees. Furthermore, community, social and personal services, including general government services, contributed 32 per cent to total employment. Despite the fact that the public authorities employed more workers than the manufacturing industry, these authorities generated less output.

TABLE 3.4: EMPLOYMENT CREATION AND CONTRIBUTION TO GDP FOR THE NON-AGRICULTURAL SECTORS IN 1997

Sector / Percentage contribution	Employment	GDP
Public authorities	35.0	15.0
Mining	10.6	7.7
Manufacturing	27.0	23.9
Construction	6.2	2.8
Trade	15.0	16.0
Private services (Financial)	6.2	17.9
Other	0.0	16.7
Total	100.0	100.0

SOURCE: SARB 1999a:107; 1999a:130

3.5.7 Trade in the manufacturing sector in South Africa

Trade is reflected by goods and services exported and imported during a period (Fourie et al. 1995:485). World exports have increased during the period 1970-1990 (Todaro 1994:411). In fact, exports of developed countries rose from 71,9 per cent to 74,6 per cent during the same period (Todaro 1994:411). Moreover, exports of developing countries rose from 17,6 per cent to 17,8 per cent during the period 1970-1990. According to Todaro (1994:412), developed countries exported 81 per cent of manufactured goods while developing countries exported 28 per cent of manufactured products. Other developing countries, however, have exported more manufactured goods. For example, manufactured exports in South Korea increased from 74,9 per cent to 94,1 per cent during the period 1970-1990 (Todaro 1994:413). This means that export production places significant demands on manufacturing production and employment.

During the period 1946-1970, exports failed to stimulate growth while import substitution and domestic demand were the driving force of growth (Schrire 1992:322). Import substitution was

often undertaken by multinational industries which had previously exported to South Africa. These industries provided the capital know-how required in domestic industries (Fourie et al. 1995:658). Growth in the manufacturing industry itself stimulated exports.

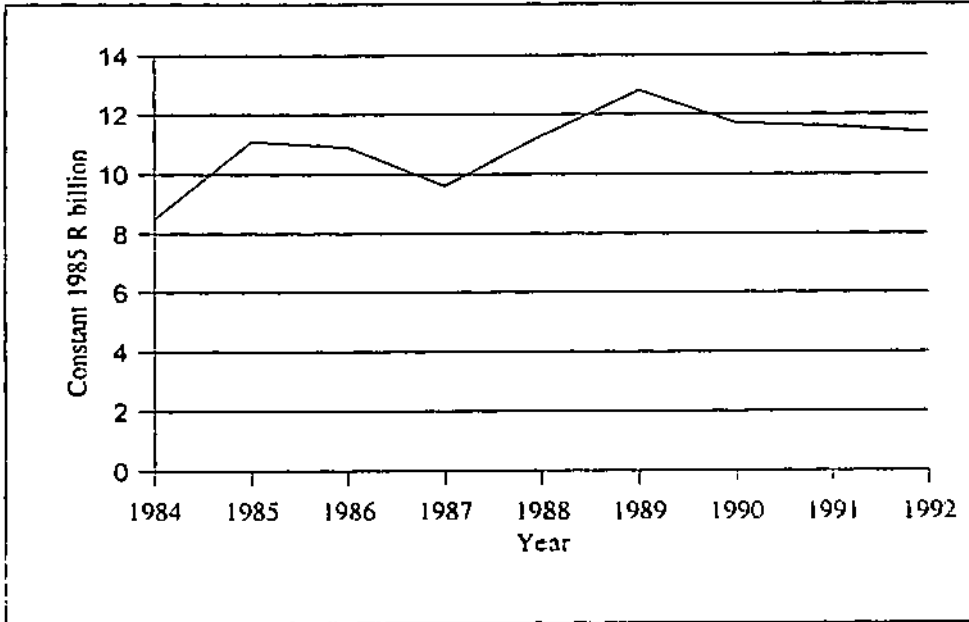
South Africa's share of world manufacturing trade fell from 8 per cent to 0,3 per cent during the period 1955-1985 (Naudé & van Heerden 1992:136). Moreover, its share of developing country's manufactured exports fell from 12,6 per cent to 1,9 per cent during the same period. This was mainly due to the fluctuating gold prices, the changing international competitiveness and the exchange rate policy (Naudé & van Heerden 1992:137).

Exports in South Africa are dominated by gold mining products followed by manufacturing (Joffe et al. 1995:7). This shows that manufacturing exports in South Africa have been low. This was mainly due to the slowdown in world economic growth and decrease in international demand for exports (Fourie et al. 1995:501). Manufacturing products account for less than 25 per cent of total exports, of which two-fifths is exported to Southern Africa (ANC 1997:50).

Manufacturing exports increased from 8,5 per cent to 11,3 per cent during the 1984-1988 (Joffe et al. 1995:8). A large proportion of the increase was attributed to increased exports of semi-processed primary products during the 1980s. These exports, however, declined from 11,1 per cent to 9,6 per cent during the period 1985-1987 (Figure 3.5). The decline was caused by low levels of demand, sanctions, political and economic stability, and capital outflows (Fourie et al. 1995:145).

Figure 3.5 shows that manufacturing exports declined further from 12,8 per cent to 11,4 per cent during the period 1989-1992. This was due mainly to weak demand in exports. Since 1994, manufacturing exports have been increasing due to export incentives, increased demand for manufacturing products and the devaluation of the rand. South Africa's manufacturing export growth rate was 7,4 per cent during the period 1993-1994 (ANC 1997:51). This growth rate exceeds the growth of world imports. According to Hanival & Hirsch (1998:4), domestic producers targeted export markets in order to maintain sales.

FIGURE 3.5: MANUFACTURING EXPORTS FOR SOUTH AFRICA FOR THE PERIOD 1984-1992

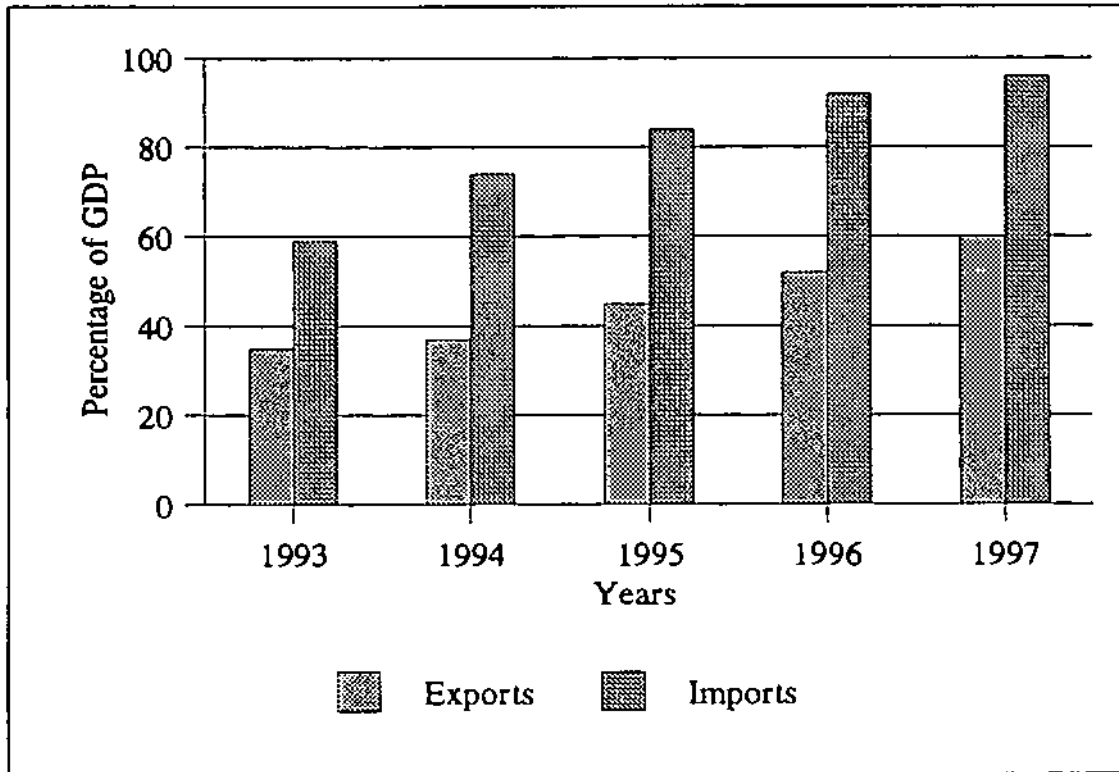


SOURCE: Joffe et al. 1995:8

Despite the high growth rate attained during 1993-1994, South African manufactures still has the lowest world market share at 0,2 per cent, compared with 0,7 per cent in agriculture and 1,4 per cent in minerals and fuel. A major part of manufacturing export growth is attributed to traditional large export industries. For example, the iron and steel and vehicles industries contributed 21,4 per cent and 17 per cent to manufactured exports during 1997 (IDC 1998:14). Other industries that made a significant contribution to manufactured exports are leather and processed food industries. These industries contributed 9 per cent and 7,4 per cent respectively to manufactured goods during 1997 (IDC 1998:14).

Manufactured exports from South Africa have increased since 1993 (Figure 3.6). Manufactured exports by the South African Customs Union (SACU) also increased from 16,7 per cent to 20 per cent during the period 1995-1997. The substantial increase in South African exports of transport equipment was largely attributed to railway locomotives, with almost 35 per cent of all transport equipment destined for Taiwan (IDC 1998:11).

FIGURE 3.6: TOTAL TRADE IN THE MANUFACTURING SECTOR IN SOUTH AFRICA FOR THE PERIOD 1993-1997.



SOURCE: IDC 1998:9

The USA and Malaysia were the second and third largest importers of locally produced transport equipment. The motor vehicle sector, with a significant contribution of 4,7 per cent to total manufactured exports, as well as the sectors producing other chemical products, textile and clothing, plastics, furniture, electrical machinery and equipment also turned out a good export performance during 1997 (IDC 1998:11). According to Nomvete et al. (1997:46), export industries are relatively more labour-intensive than import-competing industries. Their good performance means they can absorb more labour.

South Africa imports capital and intermediate goods because these goods cannot be manufactured locally on a profitable basis. The manufacturing industry cannot function without imports (Fourie et al. 1995:655). The average propensity to import, which remained at about 23 per cent, is testimony to the role of imports in South Africa (Schrire 1992:323). Between

1993 and 1997, the composition of South Africa's stock of capital in manufacturing rose from 11,9 per cent to 14 per cent (IDC 1998:11). Imports of consumables such as beverages, food products and footwear also increased during 1997. This reflects the moderate increase in real consumption expenditure on semi-durable and non-durable goods over this period (IDC 1998:11). Import demand and domestic production of the clothing sector declined during 1997. The sharp decline in import demand for iron and steel products, in turn, has to be seen against the background of a strong increase in local production volumes of this sector.

Figure 3.6 further shows that imports to South Africa have increased since 1993. According to Black (1991:160), this is mainly due to the skewed income distribution and foreign technology dependence. Moreover, this situation has limited the access of the majority of the population to products. This indicates a structural constraint. Other developing countries, however, such as Brazil and Mexico have an import propensity of 10 per cent (Naudé & van Heerden 1992:137).

According to Fourie et al. (1995:144), imports have to increase when the South African manufacturing industry grows. This means that capital-intensive production has to increase in order for the industry to keep up with technology and be competitive. Since South Africa has abundant unskilled labour, most export industries contribute to more employment. Manufacturing industries that compete internationally are technologically dynamic as they are concentrated in industries where knowledge externalities exist (Hanival & Hirsch 1998:40). This encourages economic growth and employment creation.

3.5.8 Productivity in the manufacturing sector in South Africa

Productivity is the relationship between the quantity of goods produced and the quantity of inputs used to produce the goods (Brue & McConnell 1989:465). It measures the relative efficiency of inputs. This means that improvements in productivity is shown by the efficient use of resources. There are three types of productivity, namely, labour, capital and multi-factor productivity (Barker 1992:61). Labour productivity is defined as the number of units of output obtained from a unit of labour. Capital productivity refers to the number of units of

output per unit of capital input. Multi-factor productivity represents an increase in productivity which is the result of greater efficiency. This includes both labour and capital inputs.

Productivity growth is not a threat to manufacturing employment (CEAS 1993:65). Furthermore, it has to be accompanied by an increase in manufacturing production, income and investment in order to lead to manufacturing employment. According to the CEAS (1993:69), productivity growth was inhibited by high inflation and co-operation between employer and employees. This is mainly due to the fact that high inflation limits savings. This, in turn, distorts the domestic demand structure. In addition, strained labour relations characterise stayaways and strikes (CEAS 1993:83). These, in turn, have a negative effect on growth.

According to Barker (1992:61), studies on productivity usually concentrate on labour productivity, because of the importance of labour in production. Furthermore, this was mainly because labour is the most readily measurable and available factor of production. This does not suggest that labour contributes to increases in productivity. Other factors contributing to increases in productivity include more productive utilisation of resources, changes in technology, investment in both human and physical capital, economies of scale and the structure of the economy (CEAS 1993:65).

According to Joffe et al. (1995:11), productivity growth in South Africa is measured by using multi-factor productivity. During the period 1970-1990, labour productivity in the manufacturing industry increased from 82,1 per cent to 100 per cent (Table 3.5). The average annual growth rate of labour productivity, however, shows that there was a decline from 1,4 per cent to 1,3 per cent during this period (NPI 1998:P.002). This was mainly due to factors such as sanctions, disinvestment, past industrial policies, deficiency in the education system and the inappropriate and capital-intensive nature of investment (Joffe et al. 1995:12). The average annual growth rate of labour productivity increased from 1,3 per cent to 8,9 per cent during the period 1990-1997 (NPI 1998:P.002). This was mainly due to the lifting of sanctions and changes in industrial policy.

During the 1970s, the poor performance of the South African manufacturing sector led to low productivity growth (CEAS 1993:68). Low growth, accompanied by a decrease in capacity utilisation, led to a decrease in productivity growth. This growth was further influenced by a high inflation rate. A high inflation rate did not make South African manufacturers competitive in both the domestic and international markets, which also contributed to low employment levels.

Table 3.5 shows that labour productivity has shown an increase since 1990. During 1996, labour productivity decreased (NPI 1998:P.002). This was mainly due to an increase in production and capacity utilisation of manufacturing during this year. Fluctuations in the share of manufacturing in GDP, however, contributed to the decrease in labour productivity.

TABLE 3.5: PRODUCTIVITY IN THE MANUFACTURING SECTOR IN SOUTH AFRICA FOR THE PERIOD 1970-1997.

Index 1990 = 100	1970	1975	1980	1985	1990	1994	1995	1997
Labour	82.1	89.5	102.3	95.4	100	98.4	105.6	113.8
Capital	159.4	140.4	122.3	92.2	100	84.6	87	82.7
Multi-factor	101.4	103.4	109.5	94.1	100	91.8	96.1	96.2

SOURCE: NPI 1998:P.002

According to the CEAS (1993:77), the quality of the labour force influences productivity. Educated and trained workers are able to increase productivity. In Hong Kong, labour productivity has been strong since 1990 which has contributed to the increased pace of economic activity (Husain 1997:4).

During the period 1970-1990, capital productivity declined from 159,4 per cent to 100 per cent (Table 3.5). The multi-factor productivity also declined from 101,4 per cent to 100 per cent during the same period (Table 3.5). The average annual growth of capital and multi-factor productivity, however, increased from -2,5 per cent to 3,1 per cent and 0,3 per cent to 2 per

cent respectively during the period 1970-1990 (NPI 1998:P.002). This was mainly due to capital not being efficiently utilised and to low levels of investment in the manufacturing industry in South Africa (Joffe et al. 1995:21). Capital productivity increased during the period 1994-1995 (Table 3.5). This was mainly due to the high technology used in manufacturing which was imported. Countries with low technological endowment have to exploit existing knowledge in order to attain high productivity growth rates (Yadavalli 1998:406). According to the Department of Finance (1999:43), fourteen manufacturing industries experienced an increase in the productivity of fixed capital in 1997. Economic growth requires more and better capital equipment. New technology is needed in order for capital equipment to be effective (Fourie et al. 1995:652). Furthermore, an increase in capital-intensity of production in a country which has more labour does not increase employment.

Table 3.5 shows that multi-factor productivity in the manufacturing industry in South Africa decreased from 100 per cent to 91,8 per cent during the period 1990-1994. This was mainly due to the low levels of employment, investment and education and training (Joffe et al. 1995:12). Multi-factor productivity increased from 91,8 per cent to 96,2 per cent during the period 1994-1997 (Table 3.5). Consequently, these economists argue that this means that South African manufacturing industries are not using resources efficiently. The average annual growth rate of multi-factor productivity has increased from 2 per cent to 3 per cent during the period 1990-1997. This shows that the demand and supply of manufactured goods have increased. According to the CEAS (1993:89), the demand for manufactured goods can increase if productivity increases are in the form of low prices to consumers. Manufacturing industries such as textile, food, beverages, tobacco, wood, metal products, electrical machinery and chemicals have shown increased multi-factor productivity while this form of productivity has been poor in other industries (Wright 1994:24). This indicates that labour-intensive industries can create more employment opportunities than capital-intensive industries.

Productivity in the manufacturing industry in South Africa can be compared to productivity of developing countries such as Singapore, Korea, India, Argentina and Brazil (Ballivan et al. 1993:73). For example, the average annual growth rate of multi-factor productivity of Singapore and Korea was 3,5 per cent and 3,8 per cent while that of South Africa was 2 per

cent during the period 1970-1990 (Husain 1997:4). Furthermore, labour productivity in the UK and Japan was 2,4 per cent and 3,5 per cent while in South Africa it was 1,3 per cent during the period 1970-1990. Brazil, India, Argentina and Mexico indicate a pattern similar to that of South Africa (Wright1994:18). This shows that developing countries do not have very reliable capital stock measures and have relatively low levels of education and high growth in unskilled labour (CEAS 1993:66). Moreover, the level of productivity of a country depends on the openness in international trade. As South Africa was internationally isolated, it encountered low productivity.

According to the CEAS (1993:70), effective competition ensures productivity growth. In South Africa the structure and behaviour of manufacturing industries determine the nature of the market. Moreover, the salient feature of the South African economy is the economic concentration mainly in the form of oligopolies. These conglomerates are characterised by a concentration of power which leads to uncompetitive behaviour (Manning & Mashigo 1994:30-31). This may include the exploitation of power. In South Africa, the majority of the population was excluded from participating in manufacturing activities (Schrire 1992:453). This was mainly due to the uneven distribution of manufacturing activity and unequal distribution of income. The new government policy argues that concentration of power has to be spread across the country (Bloch & Lewis 1998:735). This is to ensure that income and wealth is spread more evenly amongst all participants in manufacturing activities.

The large disparities in the socio-economic environment also affect productivity growth in the manufacturing sector in South Africa (Blignault & Schoeman 1998:316). These disparities include poor access to quality education, lack of sufficient primary health care and housing shortages. As a result, the growing population is unable to find jobs. When they do, they often are unable to perform effectively. According to the DBSA (1994:24), one of the key priorities to sustaining development in South Africa is investment in people. People are South Africa's main asset and more attention has to be given to the high unemployment level. The manufacturing industry, however, has the capacity to absorb labour and raise productivity (Nomvete et al. 1997:63).

The status of the natural environment also affects productivity growth and development (DBSA 1994:24). Manufacturing industries release toxic substances into air, land and water. This creates air pollution which is a health hazard. According to Todaro (1994:347), environmental degradation increases pollution-related diseases which reduce people's ability to be employed. The environment has, therefore, to be protected so that economic development is not undermined (Mears 1998:257).

Increased growth led to economic growth during 1998 (Department of Finance 1999:45). However, this has not increased employment, because of the decrease in manufacturing output. According to Hayter (1997:426), the manufacturing sector is a source of productivity and wealth. If productivity increases are accompanied by production increases, this can lead to the creation of employment opportunities (CEAS 1993:65). Furthermore, productivity growth creates opportunities for investment in human and physical capital. Investment in human capital is of significance in South Africa because unemployment, especially amongst unskilled workers, causes this factor of production to remain underutilised (Mears 1998:256). This chapter shows that the manufacturing sector is very complex and that it is affected by many factors.

3.6 SUMMARY AND CONCLUSION

The South African manufacturing industry is presently passing through a difficult time of reassessment and reorientation. Persistent problems such as declining output, low productivity, decreased employment and human resource development need attention. This is mainly due to the fact that the manufacturing industry is a major source of income, even for the government. Unlike the manufacturing industry, the government does not generate income but depends on income generated by this industry to render socio-economic and other services. In order to combat the persistent problems in the manufacturing industry, the South African government has developed some manufacturing projects such as Spatial Development Initiatives and SMMEs to create growth, employment and development. These SDI's include the Saldanha Steel, Richards Bay and Fish River projects.

A key stage of economic development involves a structural shift from a high agricultural and mining contribution to total output to the position where the manufacturing industry is increasingly responsible for a larger contribution to total output. The South African government diversified the economy from the early 1920s. This was mainly due to the belief that mineral resources had a limited lifespan. During the period 1920-1930, the government focussed on import substitution, which relied on import tariffs and quotas. Large capital-intensive industries such as Eskom and Iscor were established. Eskom was established to supply electricity and Iscor to meet the demands of the steel industry. During this period, the share of the manufacturing industry in GDP to South Africa rose from 7,4 per cent to 9,7 per cent. This occurred because of an increase in the consumption of products produced by the South African manufacturing sector.

During 1940, the IDC was established in order to provide capital to private manufacturing industries. It further played a role in establishing industries such as Sasol. The share of the manufacturing industry in GDP of South Africa rose from 12,8 per cent to 21 per cent during the period 1930-1940. This growth in output in the manufacturing sector contributed significantly to economic growth.

Various studies indicate that the contribution of the manufacturing sector to economic growth had diminished by the late 1960's. New growth policies had to be pursued. The Reynders Commission of Enquiry (1972) recommended that emphasis has to be placed on export development. As South Africa was still internationally isolated, the new policy was not pursued to the full. The end to isolation has made it possible for South Africa to adapt industrial policies in order to realise an improved manufacturing growth. This requires adequate performance of the manufacturing industry. For example, an increase in productivity and investment of labour and capital can contribute to the realisation of better manufacturing.

Events such as the inhibition of the establishment of labour-intensive industries and the overvaluation of the currency led to industrial stagnation during the period 1970-1990. The industrial structure in South Africa is of a large-scale and highly capital-intensive nature. It relies on natural resources of the mineral and energy-intensive industries. These natural

resources are not sufficient to sustain economic growth. They are usually in the hands of oligopolistic structures which often limit domestic competition. South Africa has abundant unskilled labour which has not been developed. The RDP states that greater attention has to be paid to labour-intensive investment in order to encourage employment opportunities.

Experiences of certain industrialised countries cannot be applied to South Africa. For example, industrial clusters in Italy have worked because it has capital-intensive resources which South Africa lacks. South Africa has to concentrate on investing in its abundant human capital. As the endogenous growth theory argues, an investment in human capital leads to economic growth and employment.

The legacy of earlier apartheid policies, political hostility and trade sanctions contributed to unemployment and low output growth in the manufacturing industry. This reduced its international competitiveness. Empirical evidence indicates that the manufacturing industry is the largest contributor to GDP in South Africa today, despite the decline in production and employment. It is the cornerstone of future expansion in terms of growth, employment and development. In order to accelerate manufacturing development, the government has developed new industrial policies on trade, human resource development, promotion of technology and investment. This shows that development requires not only capital formation but structural transformation of the manufacturing industry.

Manufacturing is the largest sector in the economy. It is the key to growth of internal demand in an international competitive economy. The manufacturing industry in South Africa is experiencing a shortage of skilled labour. It is, therefore, necessary for this industry to develop human resources through education and training. This can ensure the ability of the manufacturing industry to create more employment. The manufacturing industry, therefore, plays an important role in the regional economy of the Eastern Cape. This is the focus of the next chapter.

CHAPTER 4

THE MANUFACTURING INDUSTRY IN THE EASTERN CAPE PROVINCE

4.1 INTRODUCTION

One of the conditions for sustainable growth and development, as defined by the RDP, is the promotion of the manufacturing industry (ANC 1994:87). This is mainly due to the ability of the manufacturing industry to generate employment and encourage growth in other sectors (Nel & Temple 1992:199). The manufacturing industry is, therefore, seen as having an important role in the regional economy of the Eastern Cape (Bloch & Lewis 1998:732). The role played by the manufacturing industry in the Eastern Cape is shown by the high contribution made by this industry to the economy of the province since the early 1900's. The contribution of the manufacturing industry to national output has declined over the past five years (Driver 1998:789). This decline is caused by an inherited underdeveloped economy resulting from apartheid policies. These policies encouraged manufacturers to establish themselves in economically non-viable locations. It further granted high levels of protection to certain manufacturing industries (IDC 1995a:3). The underdeveloped nature of the Eastern Cape economy is reflected by the fact that the largest sector is that of government services. The Eastern Cape's poor socio-economic conditions contribute to relatively low levels of productivity, labour market competitiveness and investment (Blignaut & Schoeman 1998:316). These issues have a negative effect on the economic growth and employment of the province. These socio-economic conditions include poor infrastructure, low levels of education and a lack of health care facilities. According to the United Nations (1996:75-86), an improvement of the socio-economic environment promotes growth and employment.

The government of South Africa, recognises the importance of the manufacturing industry in stimulating employment through new domestic and international investment. This has to be done

in order to improve the standard of living of South Africans. The government is promoting SMME's and SDI's such as the Fish River project in the Eastern Cape in order to ensure more employment, economic growth and development (Jordan 1998:718). The Fish River project mainly focuses on the developed Port Elizabeth and East London metropolitan areas (Driver 1998:78).

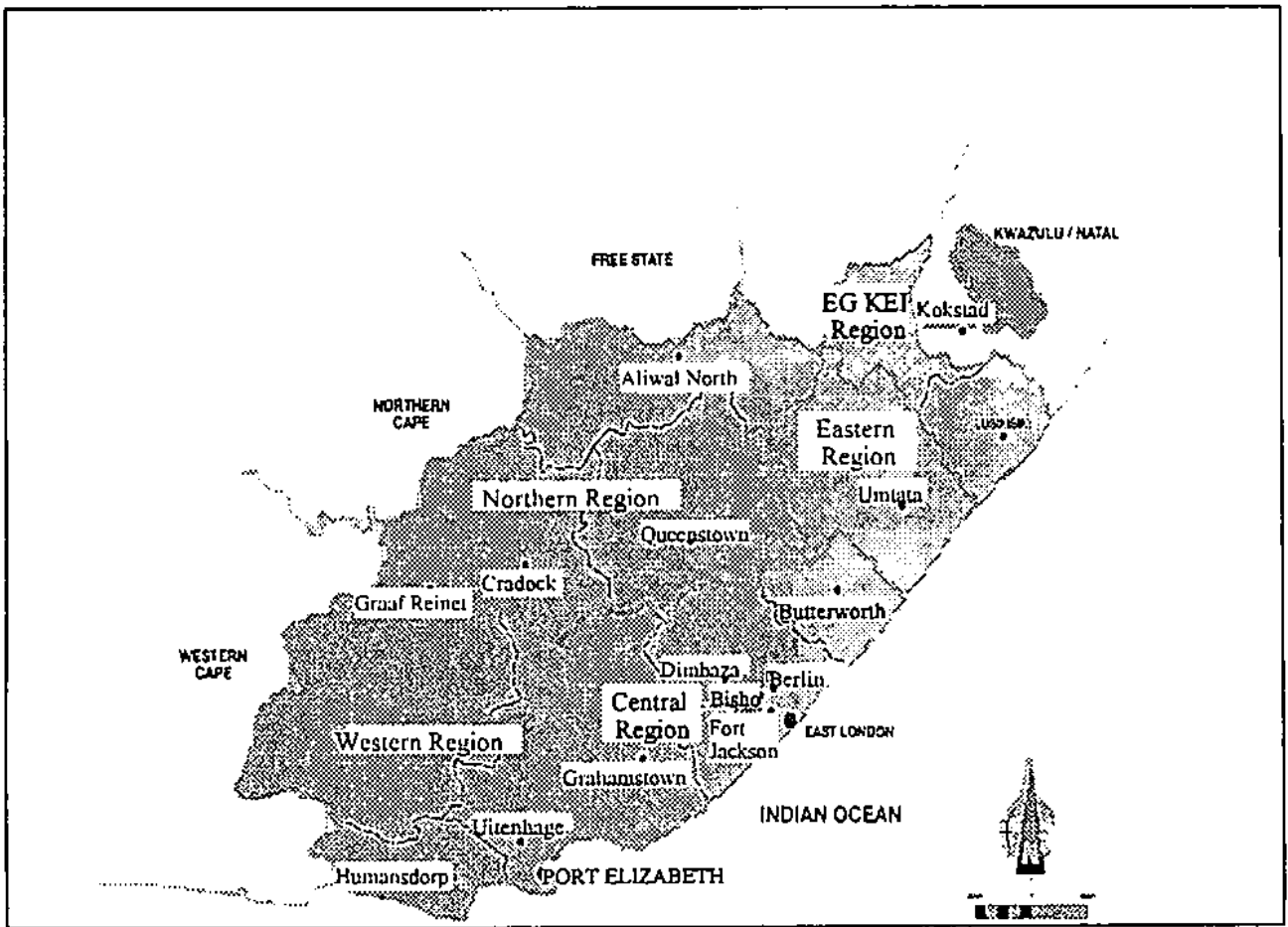
The objective of this chapter is to provide an overview of the manufacturing industry in the Eastern Cape. This is done in order to obtain a better understanding of the manufacturing industry and how it can be used to create employment and a better quality of life for the people of the Eastern Cape. This chapter gives an analysis of the following key arguments: The historical development and performance of the manufacturing industry in the Eastern Cape. The performance of this industry is illustrated by means of the GGP, employment, competitive advantage, trade and the socio-economic environment. Before the key aspects are outlined, however, it is important to highlight the demarcation, demography and the salient features of the Eastern Cape province. The key aspects of the manufacturing industry in the Eastern Cape are outlined in the paragraphs below.

4.2 THE DEMARCATION OF MANUFACTURING IN THE EASTERN CAPE

The Eastern Cape is located on the south-eastern side of South Africa (Figure 4.1). According to SSA (1998:1), the Eastern Cape occupies 14 per cent of the total land of the country. Furthermore, it has a 800km coastline that stretches along the Indian Ocean.

The Eastern Cape's two major cities, namely Port Elizabeth and East London are known as the hub of manufacturing in the region (Driver 1998:787). According to the IDPR (1997:4), Port Elizabeth, which is located on the coast, occupies 643 square kilometres of land. For the purpose of this study, the Port Elizabeth area includes Uitenhage and Despatch. The East London area includes Mdantsane and King Williams Town. In addition, Port Elizabeth occupies 437 square kilometres of land. East London, which is at sea level, is about 300km east of Port Elizabeth.

FIGURE 4.1: THE EASTERN CAPE



SOURCE: Adapted from CIMEC 1996:6

4.3 THE DEMOGRAPHY OF MANUFACTURING IN THE EASTERN CAPE

The Eastern Cape has the third largest population in South Africa after Kwazulu-Natal and Gauteng (SSA 1998:7). Fifteen per cent of the total South African population resides in the Eastern Cape (SSA 1998:7). The majority of the population in the Eastern Cape are Africans (SSA 1998:7). They constitute 87 per cent of the population of the province. Coloureds, Whites and Indians constitute 7 per cent, 6 per cent and fewer than 1 per cent respectively. According to Pakes (1998:7), Port Elizabeth, with a population of over 1 million, is the largest city in the

Eastern Cape. Furthermore, the total labour force in the manufacturing industry of Port Elizabeth contributed 60 per cent to the GGP of the province during 1994. This shows that Port Elizabeth has a large industrial base. East London, with its dense population, is the second highest contributor to manufacturing activity in the Eastern Cape with 20,8 per cent in 1994 (Ernst & Young et al. 1995:10).

According to Driver (1998:790), manufacturing has been significant in Port Elizabeth and East London since the early decades of the century. Table 4.1 compares manufacturing in the Port Elizabeth and East London areas. The motor manufacturing industry is dominant in Port Elizabeth while food processing, clothing and textiles industries are dominant in East London (Table 4.1). Table 4.1 further shows that the labour force relies on the motor and food processing industries which are labour-intensive industries.

TABLE 4.1: COMPARISON OF MANUFACTURING IN THE PORT ELIZABETH AND EAST LONDON AREAS FOR 1996

	Number of manufacturing concerns	Number of jobs in manufacturing	Most important industry based on number of concerns	Most important industry based on number of jobs
Port Elizabeth	352	31 360	Fabricated metal	Motor industry
Uitenhage	31	11 838	Motor industry	Motor industry
East London	148	25 466	Food processing	Food processing
King William's Town	29	2 104	Food processing	Clothing

SOURCE: Adapted from Driver 1998:790

According to SSA (1998:8), the Eastern Cape is more rural in character than many other parts of South Africa. This is shown by the fact that 65 per cent of the population live in rural areas and 35 per cent in urban areas. This situation puts heavy demands on the manufacturing industry of

the province in terms of providing employment opportunities. In South Africa as a whole 50 per cent of the population live in rural areas and 50 per cent in urban areas on average (Hirschowitz & Orkin 1996:6).

In the Eastern Cape 73 per cent of Africans live in rural areas and 27 per cent live in urban areas (SSA 1998:8). Furthermore, 85 per cent of Coloureds, 90 per cent of Whites and 99 per cent of Indians live in urban areas. Females dominate the gender structure in the Eastern Cape and live mainly in the rural areas where manufacturing or economic activity is poor (Horn et al. 1995:8). This is caused by the fact that men tend to migrate to the cities in search of employment. In general, however, more people have moved from the province than into it (SSA 1998:13).

The Eastern Cape has a higher proportion of children than the rest of South Africa (SSA 1998:12). In the Eastern Cape, children under the age of 15 constitute 42 per cent of its population, compared to 30 per cent on average, for the whole of South Africa. This shows that the province has a high youth dependency ratio compared to the national ratio. This situation is typical of an underdeveloped province (IDC 1995a:3).

The Eastern Cape has a dependency ratio of 3,7 dependents per household while that of South Africa is 1,54 dependents per household (SSA 1998:12). Dependency refers to the number of people who are supported by a single person participating in the labour force excluding him/herself. The high level of dependency in the province is caused, amongst other factors, by the high population growth rate, high fertility and the age distribution structure. This is indicative of a lack of employment opportunities and a higher unemployment rate in the area.

4.4 SALIENT FEATURES OF THE EASTERN CAPE

Higher fertility rates occur in the rural areas than in the urban areas (SSA 1998:12). In addition, the fertility rate gives a suitable indication of the standard of living of the province. The high fertility rate reflects a low standard of living and a high dependency ratio. The high dependency

ratio shows that the Eastern Cape economy is unable to absorb new entrants into the labour market (Blignaut & Schoeman 1998:303). Furthermore, this situation results in unemployment.

Unemployment is higher in the Eastern Cape than in South Africa as a whole (SSA 1998:16). Furthermore, the unemployment rate in the Eastern Cape is 41 per cent while that of South Africa as a whole is 29 per cent. According to the SSA (1998:16), 45 per cent of the Eastern Cape's population work in the formal sector compared to 59 per cent on average in South Africa. Moreover, 14 per cent work in the informal sector compared to 12 per cent in South Africa as a whole. The level of unemployment in the rural areas of the Eastern Cape is 49 per cent (SSA 1998:19). This is higher than the South African unemployment rate of 38 per cent in rural areas.

Many people in the Eastern Cape cannot secure an adequate means of living (RDAC 1993:11). This is mainly due to the uncertain rainfall and the large areas that are either mountainous or too dry for agricultural production. According to the DBSA (1994:59), mining cannot provide jobs because there are few, if any, mineral deposits in the Eastern Cape. In addition, the growing population of the province is unable to obtain work in the primary sector. Thus, it follows, that the majority of job-seekers have to be accommodated in the manufacturing industry. This does not mean that the primary sector has to be neglected.

The Eastern Cape has the second largest percentage of workers in the informal sector after the Northern Province. This includes the rural informal sector or subsistence agriculture which is only a survival economy with very low income (Todaro 1994:255). The Northern Province has 25 per cent of all workers in the informal sector while the Eastern Cape has 23 per cent (SSA 1998:35). Furthermore, the percentage of workers employed in the informal sector in South Africa is less than that of the Eastern Cape.

The age, population and dependency ratio of the Eastern Cape show that the province is less developed than the other provinces. The province, however, boasts of its long tradition of manufacturing, good infrastructure, serviced industrial land and the favourable location of Port

Elizabeth and East London (Herald 1999:11). These features have enabled the manufacturing industry to attract new domestic and foreign investments. The new investments will have to contribute towards the creation of sustainable jobs and industrial regeneration. These investments consist of the Fish River SDI, the South African Breweries plant in East London, Coega IDZ, Motor Industry Development Programme (MIDP), the Delta Motor Corporation project and the Port Elizabeth Regional Chamber of Commerce and Industry project (PERCCI) (Driver 1998:790). The projects by Delta, MIDP and PERCCI consist of investment in the motor industry. They brought about positive structural changes in the industry (Herald 1999:11). Moreover, the MIDP encouraged exports in areas with access to ports.

The positive structural changes that have occurred include the increase in manufacturing exports, political stability, a more stable labour force and social capital (Driver 1998:790). Moreover, these factors promote relationships between the private and public sectors. This enhances the benefits of investment and human capital (Mears 1998:256).

4.4.1 Electricity, water and the manufacturing sector in the Eastern Cape

The Eastern Cape is one of the provinces where a small proportion of African households use electricity as the main source of energy for lighting (SSA 1998:41). Electricity for lighting is unevenly distributed amongst the population groups and metropolitan areas. The number of African, Coloured and White households that use electricity as their main source of energy for lighting is 26 per cent, 72 per cent and 99 per cent in 1995 (SSA 1998:41). In addition, only 16 per cent of African households living in the Eastern Cape used electricity for cooking in 1995. The Port Elizabeth area consumes 46 per cent of the total demand for electricity (RDAC 1993:33). This is mainly because of the increased industrial growth in the area.

Increased manufacturing development requires increased development in infrastructural services such as electricity and water (Hayter 1997:92). Eskom is South Africa's and the Eastern Cape's supplier of electricity (RDAC 1993:32). Eastern Cape rural areas are electrified by way of the

existing rural powerline infrastructure.

The Eastern Cape sub-regions 1 and 2 consume approximately 80 per cent of the electricity of the province, while subregion 3, 4, and 5 consume 20 per cent (Ministry of Economic Affairs 1996:6). In addition, electricity costs are the second cheapest in the world and all factories are supplied with 3-phase electricity at 220/380 volts.

The Eastern Cape has an abundant capacity to accommodate further industrial expansion, because the industrial nodes of the province are adequately supplied with good quality water at low cost (Ministry of Economic Affairs 1996:8). It is essential, however, that storage capacity be enlarged and maintained. This is mainly because of the low and irregular rainfall and an increase in industrial growth which results in a large demand for water. According to the Ministry of Housing & Local Government (1995:18), an increase in the storage capacity for subregions 3, 4 and 5 has to be considered to enable the sub-regions to specialise in manufacturing industries that use water extensively and to provide water for irrigation.

Of the African households in the rural areas, only 5 per cent have water inside their houses, while 9 per cent had a tap on site in 1995 (SSA 1998:41). Moreover, most African households have to fetch water from a source that is not on site. Animals also use these water sources which creates a human health hazard. According to Ernst & Young et al. (1995:16), this hazard can contribute to low productivity of labour in the manufacturing industry. The provision and maintenance of water in the Eastern Cape has to receive urgent attention. Unless this is done, industrial growth cannot take place (Ministry of Housing and Local Government 1995:18).

The Eastern Cape has to use its manufacturing base because it has strong linkages and a capacity to build social capital (Driver 1998:791). Social capital involves the recognition of the community, which is the key to sustained socio-economic development (Mears 1998:256-272). Without social capital, a sustainable environment, economic growth and human well-being are limited. In fact, socio-economic variables such as education, public safety and infrastructure are of significant

importance in economic growth and development (Blignaut & Schoeman 1998:304).

4.5 HISTORICAL DEVELOPMENT OF THE MANUFACTURING INDUSTRY IN THE EASTERN CAPE

Manufacturing development in the Eastern Cape began to take off during the period 1920-1950 (RDAC 1993:18). During 1925, the Pact government introduced measures which encouraged local manufacturing (Pakes 1998:4). Growth and development came from the motor industry and production of consumer goods during the same period. The establishment of leading manufacturing concerns such as the Ford Motor Company, General Motors, Mercedes-Benz, General Tyre, Volkswagen, Delta Motor Corporation, Firestone, Johnson & Johnson and Cadbury is indicative of this trend (RDAC 1993:19). Furthermore, these industries were established in the Port Elizabeth/Uitenhage and East London/ King Williams Town areas. Furthermore, the manufacturing industry in the East London/King Williams Town area consists of the motor, textiles, chemicals, food processing and electronics industries. The fact that these cities had railways and harbour facilities facilitated these developments.

The manufacturing industry in the Eastern Cape is mainly concentrated in and around the Port Elizabeth and East London metropolitan areas. These areas contribute 81,8 per cent of the province's manufacturing production (Ernst & Young et al. 1995:10). According to Driver (1998:790), the motor industry makes up 60 per cent of manufacturing activity in the province. This shows that production in the motor industry is dominant in the province. The balance of 18,2 per cent consists of contributions mainly from Fort Jackson and Dimbaza in the former Ciskei, and Umtata, Butterworth and Queenstown in the Transkei (Ernst & Young et al. 1995:11).

According to the IDC (1995a:2), labour migrated from the former Ciskei and Transkei areas to the mines on the East Rand and metropolitan areas such as Port Elizabeth and Cape Town. Labour, however, was prevented from entering the cities due to pass and influx control laws. This generated large problems such as squatter settlements and social instability both in South Africa

and the Eastern Cape (Gelderblom & Kok 1994:184).

During the period 1950-1960, the motor, food, clothing and textile industries in the Eastern Cape grew rapidly (IDC 1995a:3). Moreover, this was caused by an increase in capital investment. According to Schrire (1992:453), this production mainly focused on the needs of the affluent. This means that production of motor vehicles and expensive durable goods received preference over the provision of food and shelter for the poor. This situation led to the deterioration of socio-economic conditions in the province.

The development of manufacturing declined towards the end of the 1970's to the middle of the 1980's (Nel 1993:21). The decline was caused by factors such as the relocation of the motor industry from the Port Elizabeth/Uitenhage area to Gauteng. The policy of import substitution limited local manufacturers from competing in national markets. The policy of industrial decentralisation prevented the influx of African people to the main urban areas (DBSA 1991:14; Black et al. 1987:9). Despite the relocation of the motor industry, the chemical, metal products, machinery, textile and clothing, food and beverage industries increased their growth during the period 1984-1988 (Black et al. 1987:10). This growth occurred as a result of the restructuring of the manufacturing industry. That is, as local businesses faced international sanctions and disinvestment, they sought and developed new markets and product lines in order to attract investment in the province. According to Bell (1986:280), subsidy schemes and tax free options were introduced in the Eastern Cape in order to attract foreign investors to the border areas of the province during 1982.

The contribution of the manufacturing industry to the GGP of the Eastern Cape increased from 23,3 per cent to 24,2 per cent during the period 1980-1993 (Ernst & Young et al. 1995:1). This was mainly due to the incentives that were made available to the manufacturing industry. The manufacturing industry investment in this province is more capital-intensive than in most other provinces (RDAC 1993:19). Moreover, this resulted in a loss of jobs due to the relative cost of capital to labour. Empirical evidence shows that the shortage of capital and skilled labour is a

problem in developing countries. These countries often favour capital-intensive techniques used by developed countries (Hayter 1997:71).

The secondary sector responded positively to the lifting of sanctions during the period 1993-1994 (Hanival & Hirsch 1998:4). Manufacturing production grew strongly in 1994 as both export and domestic demand was strong (Driver 1998:791). Furthermore, as South Africa was gained access to international markets, programmes such as the Motor Industry Development Programme and Spatial Development Initiatives encouraged manufacturing investment and competition.

The manufacturing industry in the Eastern Cape has been targeted for development (Evening Post 1999:14). At the end of 1996 the government initiated projects such as the Fish River project to create employment opportunities in the province. The DTI is now focusing on Small Medium and Micro Enterprises to create employment (Hanival & Hirsch 1998:64). This is shown by the good performance of SMME's in developing countries. During 1997 the Manufacturing Advisory Centre (MAC) was established in Port Elizabeth in order to improve the growth and competitiveness of SMME's (Evening Post 1999:14). Furthermore, MAC was established because the manufacturing industry is recognised as the engine of growth of the economy. This means that the industry's well-being has significant implications for the creation of wealth in South Africa as a whole (Cohen & Zysman 1987:1).

4.6 THE PERFORMANCE OF THE MANUFACTURING INDUSTRY IN THE EASTERN CAPE DURING THE PERIOD 1980-1994

During the 1980's, the Port Elizabeth/Uitenhage area experienced a decline in manufacturing industries (Nel 1993:21). This was mainly caused by the withdrawal of the motor industry from Port Elizabeth to the Gauteng Region. Manufacturing resources were also shifted to the East London area (Nel 1993:21). This caused an improvement in manufacturing production and employment in the area. Production subsequently grew from 16,29 per cent to 20,27 per cent during the period 1984-1988. The shift was a result of the industrial incentives of the Regional

Industrial Development Programme (RIDP) during the period 1980-1991 (Nel 1993:21).

Despite the relocation of the motor industry, the Port Elizabeth/Uitenhage metropolitan area is still the home of manufacturing industries in the province (Table 4.1). According to Nel (1993:19), agricultural products such as wool and food produced in the Border/Kei regions are marketed and processed in the Port Elizabeth/Uitenhage metropolitan area. This shows that the manufacturing industry has strong linkages that are important for the growth and development of a country's economy (Gillis et al. 1996:63).

During the period 1991-1993, the contribution of the manufacturing industry to the GGP of the Eastern Cape decreased from 26 per cent to 24,2 per cent (Table 4.2). According to the DBSA (1991:69), GGP refers to the total production in a specific province. The decline was mainly due to factors such as trade, financial and political isolation and the old industrial decentralisation policies.

Table 4.2 further shows that the contribution of the manufacturing industry to the GGP of the Eastern Cape remained relatively static during the period 1993-1994. This was mainly caused by the poor performance of the South African economy (Department of Finance 1999:31). The contribution of the manufacturing industry to the GGP of the Eastern Cape was 24,2 per cent compared to 23,4 per cent in South Africa during 1994 (SSA 1995:15; SARB 1999a:107). This was mainly due to the lifting of sanctions that revived the motor industry in the Eastern Cape during the period 1993-1994 (Driver 1998:791). The contribution of general government to the GGP of the Eastern Cape showed a small increase from 23,8 per cent to 24,2 per cent during the period 1993-1994 (Table 4.2). This contribution is higher than the contribution of 15,2 per cent made by this sector to GDP in South Africa.

The contribution of the secondary sector in the Eastern Cape decreased from 30,7 per cent to 29,3 per cent during the period 1991-1994 (Table 4.2). During the same period, the tertiary sector increased its contribution from 53,2 per cent to 60,8 per cent (Table 4.2).

TABLE 4.2: PERCENTAGE CONTRIBUTIONS OF DIFFERENT KINDS OF ECONOMIC ACTIVITY TO THE EASTERN CAPE GGP FOR SELECTED YEARS 1991,1993 AND 1994¹

YEAR	1991	1993	1994
A Kind of economic activity			
Agriculture	6.0	5.4	5.4
Mining	0.1	0.1	0.1
Manufacturing	26.0	24.2	24.2
Electricity	2.6	1.6	1.6
Construction	2.1	3.5	3.5
Trade	15.0	16.4	16.4
Transport	10.0	9.5	9.5
Finance	14.2	10.7	10.7
General Government	24.0	23.8	24.0
Other	0.0	4.8	4.4
B Sector			
Primary sector	6.1	5.5	5.5
Secondary sector	30.7	29.3	29.3
Tertiary sector	53.2	60.4	60.8
Other	0.0	4.8	4.4

SOURCE: SSA 1995:15

Furthermore, Table 4.2 shows that the contribution made by the primary sector declined from 6,1 per cent to 5,5 per cent during the period 1991-1994.

¹The statistical data available of GGP in the Eastern Cape Province ends in 1994.

The contribution of the manufacturing industry of the Eastern Cape to the total production of the manufacturing industry in South Africa is small (SSA 1995:15). This contribution decreased from 9,1 per cent in 1970 to 7,8 per cent in 1993 (SSA 1995:4). This was an expected development mainly because the Eastern Cape has been neglected and is, therefore, one of the poorest provinces.

Employment in the manufacturing industry in the Eastern Cape economy declined from 20 per cent to 14,9 per cent during the period 1991-1993 (Ernst & Young et al. 1995:4). According to the SSA (1998:28), as quoted in the October Household Survey of 1995, 9 per cent of the Eastern Cape's population is employed in the manufacturing industry compared to 15 per cent of the country as a whole. The survey notes that the personal services sector in the Eastern Cape contributed 42 per cent to total employment while in South Africa as a whole, this sector made a contribution of 31 per cent (SSA 1998:29). During 1996, the manufacturing industry contributed 12,33 per cent to total employment in the Eastern Cape compared to 28 per cent in South Africa as a whole (SSA 1998:37). This shows that there is less manufacturing sector employment in the Eastern Cape than in South Africa as a whole.

4.6.1 Criticism of the performance of the manufacturing industry in the Eastern Cape

The Eastern Cape suffers from a disparity between economic and population concentration. This is shown by the fact that with 16,4 per cent of the total population, the province contributes 7,8 per cent to manufacturing production in South Africa (Bloch & Lewis 1998:733). Due to the industrial decentralisation policies of the past, manufacturers were encouraged to establish in locations that were not economically viable (Ministry of Economic Affairs 1995:2). According to Bell (1986:280), firms were located away from the core areas due to high costs and the incentives they received. This did not create sustainable economic development and growth, although this was the main intention of the Regional Industrial Development Programme (RIDP).

In order to create sustainable economic development and growth, it is essential to create an

environment that encourages employment (Driver 1998:803). This means that the manufacturing industry in the Eastern Cape has to provide employment for the majority of its population. This type of employment creation was not possible because of many factors which include the low human development index, abundant unskilled labour and unequal distribution of manufacturing activity (Driver 1998:790).

According to Driver (1998:803), growth has to come from within the province rather than from outside. This argument is in line with the views of the endogenous growth theorists. Growth can come from within the Eastern Cape if, for example, relations between the manufacturing industries, provincial government, educational institutions and local authorities are strengthened. According to Lee (1996:7), it is necessary that the private sector, local government, provincial government and educational institutions share information and knowledge for this purpose. Furthermore, sharing knowledge and know-how ensures a better quality of life for all people. It further ensures efficiency within the manufacturing industry (Driver 1998:806). This was shown by the fact that the Eastern Cape showed business confidence of 52 per cent compared to 54 per cent in Gauteng (IDPR 1997:62).

In order to understand the performance of the manufacturing industry in the Eastern Cape, an analysis of the changing structure of the industry, employment, the competitive advantage and trade is required. These aspects are outlined below.

4.6.2 The changing nature of economic activity in the Eastern Cape

The various contributions of the manufacturing industry have changed the production structure of the Eastern Cape economy. The importance of the secondary and the tertiary sectors has increased, and that of the primary sector has decreased (Table 4.3). This pattern of development is the same as that of South Africa as a whole. The manufacturing industry, however, has laid the foundation for sustainable growth in the Eastern Cape, despite the structural changes such as the structure of production and changes in consumer demand occurring in the secondary sector.

especially in manufacturing (Fourie et al. 1995:656).

According to the IDC (1995a:11), the Northern Cape sub-region has manufacturing opportunities in food production. This includes grain mills, abattoirs, bakeries, metal products, light engineering and printing. This shows that this sub-region does not have large industrial concentrations. Therefore it lends itself to the creation of opportunities for small, medium and micro enterprises (SMMEs) in the manufacturing industry.

4.6.3 Employment in the manufacturing sector in the Eastern Cape

According to Horn et al. (1995:27), the level of employment in the Eastern Cape is among the lowest in South Africa. The withdrawal of the Ford Company from Port Elizabeth in the 1980's worsened the employment situation in the Eastern Cape. As a result the manufacturing industry in the Eastern Cape experienced a decline of formal employment (Table 4.3).

TABLE 4.3: PERCENTAGE DISTRIBUTION OF FORMAL EMPLOYMENT IN THE SECONDARY SECTOR IN THE EASTERN CAPE FOR THE PERIOD 1980-1996

YEAR	1980	1991	1992	1993	1994	1995	1996
Manufacturing	18.5	19.9	14.9	15.2	15.2	9.0	12.3
Electricity	0.6	0.6	0.6	0.4	0.4	0.5	0.7
Construction	5.0	6.0	5.5	4.8	4.8	5.0	5.5
SECONDARY SECTOR	24.3	26.5	21.0	21.4	21.4	14.5	18.5

SOURCE: SSA 1995:P0317.2; SSA 1998:P3001

The contribution of the manufacturing industry to employment in the Eastern Cape increased from 18,5 per cent in 1980 to 19,9 per cent in 1991 (Table 4.3). This increase was mainly caused by

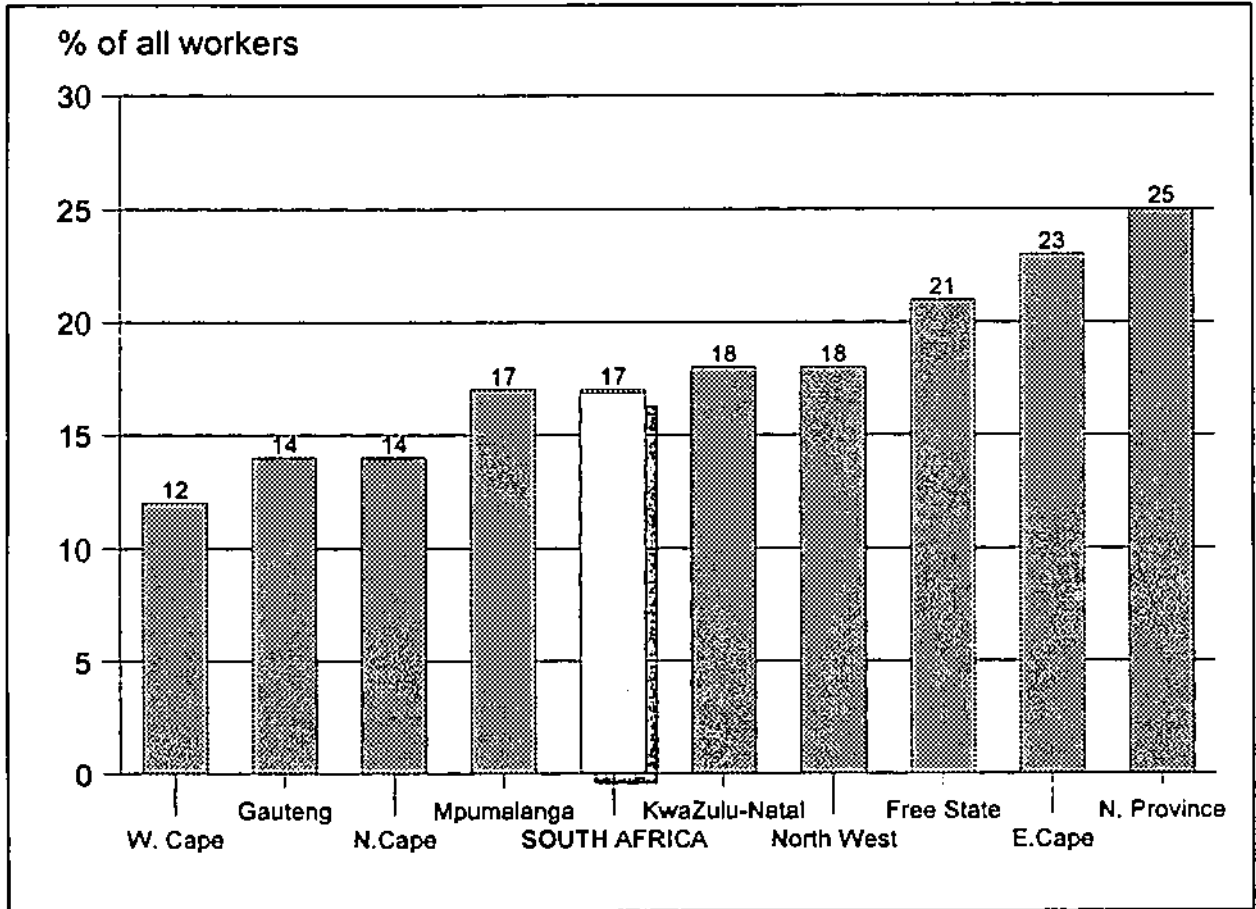
the growth in manufacturing production (Ministry of Economic Affairs 1995:1). Production came mainly from manufacturing industries in the Port Elizabeth/Uitenhage and East London areas (Horn et al. 1995:29). Moreover, the manufacturing industry in Port Elizabeth contributed 30,7 per cent to final production in Port Elizabeth in 1991.

Table 4.3 shows that employment in the manufacturing industry in the Eastern Cape grew but subsequently declined during the period 1980-1996. The decline was mainly caused by factors such as economic stagnation, utilisation of capital-intensive production methods and industrial restructuring in South Africa (IDC 1995a:4). The increase in manufacturing employment mainly occurred because of the increase in manufacturing production and the lifting of sanctions during the period 1993-1994. Moreover, as manufacturing industries regained access to international markets, demand for manufacturing products increased. This, in turn, increased manufacturing sector employment as indicated in Table 4.3.

The contribution of the secondary sector to employment in the Eastern Cape is lower than the contribution made by this sector to GGP in 1994 (Tables 4.2; Table 4.3). The manufacturing industry contributed more to employment in the secondary sector (Table 4.3). The proportion of total employment provided by the manufacturing industry has to increase to absorb a larger percentage of labour. If a large percentage of the labour force does not find work in the formal sector, they have to be accommodated in the informal sector to a larger extent (CEAS 1993:258) (Figure 4.2). Manufacturing has become the most important industry because society's demand for manufactured goods increases with income. This situation has occurred even in the largest countries (Hayter 1997:73).

Historically, few women are able to find employment in the male dominated formal sector (Todaro 1994:257). Consequently, they represent most of the labour supply in the informal sector. In the small-scale informal manufacturing industry in the Eastern Cape, the position is different. Only 6 per cent of women and 7 per cent of men are found in the Eastern Cape (SSA 1998:35).

FIGURE 4.2: ESTIMATED EMPLOYMENT IN THE INFORMAL SECTOR OF EACH PROVINCE IN SOUTH AFRICA IN 1994



SOURCE: SSA 1998:29

This is mainly due to the decrease in employment in the South African economy. This, in turn, led to a return of some migrants to the Eastern Cape (DBSA 1991:60).

The development of the manufacturing industry in the Eastern Cape is vital for continued growth, employment and development. This is mainly due to the primary resource base of the province that is decreasing (Ministry of Housing and Local Government 1995:11). In order to create employment and to meet the needs of the growing unskilled population, manufacturing industries

have to use local skills and resources. This is in accordance with the objectives of the GEAR policy (ANC 1997:57). Moreover, the GEAR policy argues that employment creation and empowerment of citizens are necessary for sustainable economic growth and development. According to the IDC (1995a:13), an industrial development strategy has to concentrate on using the unskilled labour and creating more human capital. Moreover, this can be mainly achieved through education and training. This has to be done in order to improve the quality of life, their economic situation and access to employment opportunities.

4.6.4 The competitive and comparative advantage of the manufacturing sector in the Eastern Cape

The competitive advantage of a sector within a region can be determined by considering the ratio of that sector's capital and labour productivity relative to the national average (IDC 1995a:4). Furthermore, the productivity of capital and labour is determined by calculating the ratios of production output to capital input and production output to employment, respectively. The smaller the ratio, the less productive the input of labour or capital, as compared to the national average. A ratio higher than one represents higher productivity relative to the national average. According to the IDC (1995a:4), this is indicative of a competitive advantage. Table 4.4 shows that the Eastern Cape has a competitive advantage in both capital and labour in the manufacturing, transport and social sectors. Furthermore, the province has a prominent competitive advantage with regard to capital in the chemical, rubber, plastics, coal and petroleum products sub-sectors of the manufacturing industry.

Table 4.4 further shows that the machinery and motor vehicle industry has a higher competitive advantage in labour than in capital. This is mainly due to political stability and co-operation between the local authorities, provincial government, educational institutions and the private sector (Driver 1998:807). The competitive advantage of these industries in labour shows that attention has to be concentrated on human resource development (Ernst & Young et al. 1995:3).

TABLE 4.4: COMPETITIVE ADVANTAGE BY ECONOMIC ACTIVITY IN THE EASTERN CAPE IN 1992

Sector	Capital	Labour
Manufacturing	1.43	1.67
Food processing and tobacco	0.76	1.27
Wine and beverages	1.06	1.68
Textiles	0.67	1.70
Clothing, leather and footwear	0.54	1.95
Wood and furniture	0.75	1.87
Paper and printing	1.72	1.49
Chemicals, rubber, plastics, coal and petroleum products	2.49	1.52
Non-metallic minerals	1.49	1.21
Basic metals	1.23	0.59
Metal products	0.89	1.55
Machinery	0.90	2.04
Motor vehicles and transport equipment	1.11	2.01

SOURCE: IDC 1995a:5

Many programmes can contribute toward increasing human potential. These include access to housing, health care, water and electricity (Ernst & Young et al. 1995:3). This investment introduces a new source of competitive advantage (IDC 1995a:11). Furthermore, it enhances the absorption capacity of labour in the manufacturing industry in the Eastern Cape.

According to the DBSA (1991:28), the comparative advantage of a province is reflected in its GGP location quotient. The location quotient is a measure used to determine the extent to which an industry is concentrated and which provides the historical trend of the province (Hayter

1997:435). If the location quotient is greater than 1, it indicates that the area possesses a comparative advantage. If the location quotient is small, it indicates that the area possesses a comparative disadvantage (DBSA 1991:30). Region 1, namely Western and region 2, namely Central have a comparative advantage in the manufacturing industry because their quotient is greater than one (Table 4.5). These regions can specialize in manufacturing exports.

TABLE 4.5: GGP LOCATION QUOTIENTS OF DIFFERENT SECTORS IN THE EASTERN CAPE BY REGION IN 1993

SECTOR	REGION 1	REGION 2	REGION 3	REGION 4	REGION 5	TOTAL
Manufacturing	1.3	1.0	0.3	0.3	0.3	1.0

SOURCE: ERNST & YOUNG ET AL. 1995:6

4.6.5 Trade in the manufacturing sector in the Eastern Cape

Trade patterns, especially exports, provide some insight into manufacturing competitiveness (Hayter 1997:53). The performance of manufacturing exports from developing countries has been poor during the past decade (Todaro 1994:417). This was mainly due to the fact that when income rises, the demand for agricultural products is lower than that of manufactured products. Manufacturing exports from developing countries are increasing due to trade liberalisation (Hayter 1997:54). The lifting of sanctions has caused export demand to increase during the period 1994-1995 (Hanival & Hirsch 1998:4). For example, the Port Elizabeth area handles the bulk of South African exports of wool and skins from the nearby farms (RDAC 1993:18). Furthermore, other exports from this area consist of steel products and motor vehicles. For example, Portnet in Port Elizabeth exported 2855,4 tons of textiles to the United States of America, 53678,1 tons of machinery and 36783,3 tons of vehicle components to Germany in 1998 (Portnet 1999:10).

The removal of the import surcharges and tariff reforms had the most significant impact on the

Eastern Cape economy (IDC 1995a:6). In fact, the motor vehicle, transport equipment, textiles and food processing industries can be negatively affected by trade reform if measures and strategies to improve the competitiveness of these industries are not adopted. This is mainly due to the fact that these industries are highly protected and sensitive to business cycles (IDC 1995a:11; Pakes 1998:6). This means that these industries are easily affected by changes in the economy.

The objective of trade reform is to restructure the manufacturing industry so as to increase its long-term international competitiveness (IDC 1995a:11). For example, investors can be given incentives to lower their costs in order to sustain a viable auto-industry in the Eastern Cape (Herald 1999:11). This is mainly due to the absence of heavy tariffs protecting the Eastern Cape and South African based manufacturers from foreign competition. In addition, investment is important to balance trade in the province and the Southern African region (Herald 1999:13).

The keen interest in establishing the Fish River SDI and Coega IDZ in the Eastern Cape attests to the high development potential existing in the region (Driver 1998:800). Moreover, these projects focus on attracting international manufacturing investment to enhance exports and improve the exportability of output originating in the Eastern Cape.

Manufacturing industries in the Eastern Cape receive financial support and have access to other support schemes (RDAC 1993:18). These include the Department of Trade and Industry, the Small Business Development Corporation, Manufacturing Advisory Centre and the Industrial Development Corporation. These schemes contribute to the creation of employment opportunities. For example, the IDC allocated funds for the development of the motor vehicle, food, textile and clothing industries in the Eastern Cape in 1995 (IDC 1995a:8).

During the period 1970-1990, most developing countries had to curtail imports mainly because of worsening trade balances and rising debt obligations (Todaro 1994:411). Moreover, this, in turn, led to a decline in economic growth and employment opportunities and an increase in

poverty. This situation also occurred in South Africa, especially in the Eastern Cape.

Developing countries depend on exports to finance imports (McCarthy & van Walbeek 1992:55). Moreover, if exports decrease and imports increase, it is difficult to pay for imports. This means that the import of capital goods is uncertain. In fact, an increase in manufacturing exports has a positive effect on investment and employment creation. According to the Herald 1999:13), if the Eastern Cape does not generate exports, limited capital inflow can be expected in the province.

Many developing countries depend on imports of capital and intermediate goods to accelerate their industrial expansion and to satisfy consumer aspirations (Todaro 1994:408). The manufacturing industry in the Eastern Cape is no exception. For example, Portnet in Port Elizabeth imported 21 210,3 tons of textiles, 318 361,9 tons of machinery and 196 033,2 tons of vehicle components from Taiwan in 1998 (Portnet 1999:16).

4.6.6 The impact of manufacturing on the natural environment of the Eastern Cape

According to Hayter (1997:96), manufacturing industries, discharge many unwanted pollutants into the air and water than other industries. These industries are the main source of health problems and environmental damage. Manufacturing industries in many developing countries, including the population giants of India and China, have ignored these environmental issues (Hayter 1997:97). The Eastern Cape, with its high population density, is not unique. Environmental resources have been destroyed and wasted by the manufacturing industry and growing population (Mears 1998:258). According to the Ernst & Young et al. (1995:16), population growth places constraints on the environment by disrupting ecosystems and depleting resources. In addition, the Eastern Cape is faced with increased erosion and desertification mainly due to low rainfall, soil composition and topography.

The Eastern Cape is in dire need of increased development and growth (Evening Post 1999:1). This has to take place with an awareness of the sensitivity of the environment and avoidance of

degradation (Ernst & Young et al. 1995:16). This is a daunting task which is hindered by a lack of finances. Manufacturing industries also have to be more environmentally conscious. This can lead to the provision of more jobs for the local population (Todaro 1994:354). According to Hayter (1997:430), environmental industries such as recycling industries have become large employment generators. The recycling of waste products, such as plastic used in the manufacture of useful items such as dust bins and washing basins, creates employment for many unemployed people in the Eastern Cape.

An improvement of the socio-economic environment is significant for human development (United Nations 1996:11-28). Human development is a process whereby people's choices such as a healthy life style, education and decent jobs are enlarged (DBSA 1994:1). The new growth theories argue that human development is important for economic growth. This implies that manufacturing industries have to invest in improving the health and education of workers in order to attain higher growth (Ernst & Young et al. 1995:16).

Inequalities have resulted in a large percentage of the population of the Eastern Cape being denied access to human development (RDAC 1993:36). The Eastern Cape government has identified investment in people, infrastructure and sustainable use of natural resources as important for manufacturing growth (IDPR 1997:3). The Eastern Cape, however, is characterised by socio-economic conditions such as poor access to quality education, poor public safety and inadequate infrastructure. These factors, in turn, influence the performance of the manufacturing industry. The socio-economic conditions are outlined below.

4.6.7 The role of education and training in the manufacturing sector in the Eastern Cape

Education enables people to fully participate in the economy and contributes to their improved welfare and prosperity (Horn et al. 1995:xii). It is also called an investment in human capital (Blignaut & Schoeman 1998:314). According to Romer (1994:3-22), the manufacturing industries invest in human capital because it is an important variable in output and in increasing returns to

scale. The education system in the Eastern Cape has to be structured in such a way that the production of graduands from schools and tertiary institutions has relevance for the development and growth strategy of the Eastern Cape (Ernst & Young et al. 1995:17).

Training ensures that sustainable development takes place (Ernst & Young et al. 1995:18). The RDP objectives are that manufacturing industries have to provide training to develop people's abilities, knowledge and know-how (Gelderblom & Kok 1994:251). Human capital is significant in manufacturing development. It enhances the productive capacity of the manufacturing industry (Fourie et al. 1995:651). Moreover, manufacturing industries can share information and knowledge with each other. This has to be done to meet their growing needs for goods and services and to improve the quality of life of people. This, in turn, ensures efficiency in the domestic manufacturing capacity.

Historically, the education and training systems in the Eastern Cape have been and continue to be viewed as inefficient and ineffective (Ernst & Young et al. 1995:18). This is mainly because they lack the resources, legitimacy and management required to make the system work. These factors, in turn, contributed to high illiteracy, drop-out rates and poorly educated people (Ernst & Young et al. 1995:19). Thus few people were able to participate in the economy of the Eastern Cape. This is shown by the fact that the literacy rate in the Eastern Cape was 59 per cent in 1991 (Horn et al. 1995:16). The literacy rate refers to people who are 13 years or older with at least a Std 5 education (Horn et al. 1995:xii).

The manufacturing industry in South Africa has shown a decline in creating employment opportunities for the entire population (Joffe et al. 1995:11). This was mainly due to poor labour productivity. This, in turn, was caused by the under-utilised labour and capital resources. Labour productivity is influenced by skills, training and technology (IDC 1995a:36). According to the Ministry of Economic Affairs (1995:3), the labour productivity growth rate in the Eastern Cape is 1,4 per cent higher than that of Gauteng, the Western Cape, the Free State and Kwazulu-Natal. This is mainly due to the more stable labour force existing in the province (Driver 1998:790).

This, in turn, can encourage the establishment of more manufacturing industries in the Eastern Cape. Furthermore, capital productivity is influenced by investment in capital assets. If all production resources are efficiently utilised, a better standard of living can be obtained.

4.6.8 Public safety and infrastructure in the Eastern Cape

According to Fourie et al. (1995:128), an environment with high unemployment and a rapidly growing population can lead to crime and social disruption. Social disruption includes squatting and health problems. This has a negative impact on investment and business confidence. The major challenge facing the Eastern Cape in seeking to attract investment is the perceived lack of security. Rostow (1960:17) argues that in the take-off stage a country is able to take off when it has social stability. The Eastern Cape Government has given priority to the improvement of this situation (Ministry of Economic Affairs 1995:17).

Infrastructure is a term used to describe all services which are essential to production, but which are indirectly part of the production process (Horn, Levin & Lloyd 1995:36). According to Hayter (1997:92), manufacturing activities require access to infrastructure such as roads, railways, port facilities, schools, universities, hospitals and libraries. The infrastructure of an economy is the foundation of its manufacturing development (ABSA 1995:6). Building infrastructure is an expensive exercise. The existing infrastructure in most developing countries is often inadequate for manufacturing activities. Once established, it attracts new investment. Infrastructure, therefore, is a *sine qua non* for manufacturing investment (Hayter 1997:93).

The RDP and the GEAR strategies state that the development of physical infrastructure is of significant importance (ANC 1997:107-112). According to the Ministry of Housing & Local Government (1995:18), the lack of infrastructural maintenance and development hampers manufacturing industry development. Various areas in the Eastern Cape have inherited and received different infrastructural facilities. According to the Ministry of Economic Affairs (1995:7), the Port Elizabeth/Uitenhage and East London areas have well developed infrastructure

and can attract investment opportunities. Port Elizabeth factories are well served by improved road services. However, public transport in the rural areas is still a problem, as residents have to rely on infrequent buses and taxis (Ernst & Young et al. 1995:14).

4.6.8.1 **Road, rail, air and sea transport and communications and the manufacturing sector in the Eastern Cape**

Ernst & Young et al. (1995:13) state that, one of the most important physical infrastructures in an economy is its transport system. Transportation brings together resources used in the productive processes in manufacturing industries (Hayter 1997:86). That is, manufacturing activities use transport to access inputs and distribute outputs. In the Eastern Cape, transport in most respects is as developed as the rest of the country, except in the rural areas (Ernst & Young et al. 1995:14).

Road transport consists of two components, namely the highway and the vehicle as the operating unit (Horn et al. 1995:37). Furthermore, highways include primary roads consisting of highly modernised surfaced highways to tertiary roads that provide local mobility. The vehicles range from small passenger cars to the largest trucks, both serving as private and public means of transport. According to Horn et al. (1995:37), the Port Elizabeth and the Graaff Reinet areas had the largest percentage of road networks that were in good condition in 1994. Furthermore, the Queenstown area had 51,4 per cent of the road network in a fair condition and 33,1 per cent in good condition in the same year.

Kombi-taxis and buses are used as the main mode of transport for commuters in the Eastern Cape (Ernst & Young et al. 1995:14). According to the Herald (1998:1), the Eastern Cape transport systems and manufacturing processes are grinding to a halt because of deteriorating roads. Roads and streets in towns and in some urban areas are in a poor state, especially in the former Transkei and Ciskei areas.

Rail transport is controlled by Spoornet (RDAC 1993:29). Moreover, rail infrastructure established in the Port Elizabeth/Uitenhage, East London/King Williams Town and Bisho/Umtata routes has direct links with the Gauteng and Cape Town areas. Rail transport in the Eastern Cape is generally used by commuters for long journeys. Bus and taxi services are used as daily transport between the different areas/subregions (Ernst & Young et al. 1995:14). In addition, the railways are well developed except for the Transkei. According to the IDPR (1997:71), the railways are used for container and freight transport. The major types of goods transported by freight are motor vehicles and timber.

Port Elizabeth and East London have modern airports serviced by regular flights to and from other centres in South Africa. According to the IDPR (1997:71), the Port Elizabeth airport has a cargo division which makes efficient and rapid delivery of all commodities possible, including exports.

The Port Elizabeth harbour accounts for sea/water transport available to the area, and is controlled by Portnet (IDPR 1997:70). Although the harbour is not as large as that of Cape Town, it allows for consistent inflows of inputs acquired nationally or internationally, especially by the automotive industry. The harbours in Port Elizabeth and East London handle exports and imports of agricultural and manufacturing goods and materials (RDAC 1993:28). Furthermore, both ports export and import products such as motor vehicles, petroleum products, steel products, base metals, chemicals, grain products, timber and textiles. According to the IDPR (1997:70), the Port Elizabeth harbour employed approximately 1100 people during 1996.

Telecommunication services are adequate in the larger towns and cities such as Port Elizabeth/Uitenhage and East London. There are significant shortages of telephones in the former Transkei and Ciskei areas (RDAC 1993:31). The shortage of telephone lines inhibits manufacturing industries to the area. During 1998, however, Telkom established many telephone lines in rural areas in the Eastern Cape (Herald 1998:1).

Transport in the Eastern Cape is relatively well developed (Herald 1998:1). Some areas such as

the maintenance of the roads, upgrading of township roads, better utilisation of ports and existing railways, and the provision of additional transport infrastructure in the Port Elizabeth and East London corridors need attention. In fact, the Eastern Cape government has received private sector assistance to upgrade roads in the province (Herald 1999:2). This is mainly because better transport enables the manufacturing industry to meet its needs (RDAC 1993:19).

4.7 SUMMARY AND CONCLUSIONS

The manufacturing industry in the Eastern Cape is confronted with many problems such as low production, high capital-intensity, inadequate education, training and infrastructure. The Eastern Cape is further characterised by a number of development problems especially in the rural areas. Furthermore, the capacity of the manufacturing industry to absorb new entrants to the labour market has declined. This is mainly due to factors such as the utilisation of capital-intensive production methods, weak demand and economic stagnation. In the former Transkei and Ciskei the socio-economic conditions are deteriorating despite the high contribution of the public sector to employment.

The province consists of a large proportion of unskilled workers who do not participate in the economy. The increase in population puts pressure on the environment by depleting many resources. As development is accelerated, pollution from these industries is encountered. This leads to ill health amongst the population and the destruction of environmental assets. Manufacturing industries, such as those involved in recycling of waste have made an important contribution to the protection of environmental assets and the creation of employment.

In the past, the manufacturing industry both in South Africa and in the Eastern Cape was stimulated by large-scale investment in capital-intensive industries. This did not always improve the level of employment. Creating more employment opportunities involves a number of processes, such as developing appropriate technology, labour-intensive methods, improving the skills level, increasing the ability of the population to create wealth and improving entrepreneurial

opportunities.

Developing countries favour the larger cities for industrial development. This trend is also favoured in South Africa. Manufacturing activity in the Eastern Cape is unbalanced. It mainly focuses mainly on the developed metropolitan areas. The motor industry is dominant in the Port Elizabeth/Uitenhage and East London areas. This industry, however, suffered a decline in sales during the 1980's. This, in turn, led to a decline in employment.

The Port Elizabeth area has made large contributions to employment in the Eastern Cape. The manufacturing industries in metropolitan areas such as Port Elizabeth, however, have been unable to provide jobs for the growing population of the Eastern Cape. Instead, these areas have generated problems such as social disruption and an overburdened infrastructure. Today, the Eastern Cape government encourages investors to locate manufacturing industries outside the metropolitan areas and near the labour force. This is done so that these investors can serve the needs of the rural population.

Areas outside the metropolitan areas are subject to factors such as inadequate infrastructure and infrastructural services. Successful manufacturing development in any region does not only require good infrastructure. It requires an interplay between critical resources and social and human capital. That is, it requires manufacturing industries to share information and knowledge with each other and with public institutions as well. The potential for the Eastern Cape to grow and provide employment is influenced by manufacturing's investment in infrastructure, services, education, health, skills and knowledge.

Historically, as countries develop, the manufacturing industry grows rapidly and accounts for an increasing share of employment. The decrease in employment in South Africa has led to the return of some migrant workers to the Eastern Cape. Today, the share of manufacturing employment in the Eastern Cape has fallen. Despite the decline in employment, the manufacturing industry, is an important contributor to output and employment among the income generating sectors.

Manufacturing industries are at the heart of the goods and service-producing sector which dominate the employment base.

The manufacturing sector is one of the dominant sectors in the Eastern Cape. The industry possesses certain comparative advantages in sub-sectors such as motor vehicle manufacturing and food processing. With good infrastructure and abundant labour, the Eastern Cape in some areas such as Port Elizabeth/Uitenhage and East London offers many opportunities for investment and manufacturing growth.

Manufacturing development in the Eastern Cape previously encouraged artificial growth at the expense of other areas and applied various incentives. This resulted in unsustainable manufacturing industries. The present government and industrial policies encourage economic growth, particularly employment growth by attracting new manufacturing investment. Areas, such as the Eastern Cape, which has unrealized economic potential, have to attract investment.

The Eastern Cape is experiencing a period in which the direction and methods of development in the manufacturing industry have become more important than ever before. This is mainly due to the fact that the growing Eastern Cape population cannot adequately secure employment in the primary sector. The manufacturing industry has to create employment opportunities.

CHAPTER 5

PROBLEMS ENCOUNTERED BY THE MANUFACTURING INDUSTRY IN SOUTH AFRICA AND IN THE EASTERN CAPE

5.1 INTRODUCTION

Development literature shows that the manufacturing industry has a preeminent role as the driving force of economic development, growth and employment creation (Nomvete 1993:55). Historically, the manufacturing industry has accounted for an increasing share of employment (Hayter 1997:69). Since the 1990's, the contribution of the manufacturing industry to employment in South Africa and in the Eastern Cape has declined. This problem is not unique to South Africa. The share of the manufacturing industry to employment is also falling among the OECD countries (Hayter 1997:69). Despite this problem, the manufacturing industry is still the focus in most developing countries (Kasliwal 1995:285). This is shown by the manufacturing theories and the experience of countries that have succeeded in obtaining development and growth. The manufacturing industry has a greater potential for encouraging growth compared to the agriculture and service sectors (Gillis et al. 1996:484). This is mainly due to factors such as economies of scale, linkages and technical progress that the industry possesses.

The manufacturing industry in South Africa, including the Eastern Cape, operates in an economy that bears the legacy of apartheid. This economy granted economic privileges to a particular group within society (Mayer & Zarenda 1992:223). According to Nomvete (1993:55), the manufacturing industry was more successful in creating employment opportunities for white workers in the past. In addition, the manufacturing industry has been stimulated by means of large-scale investment in capital-intensive industries (CEAS 1993:251). According to Joffe et al. (1995:18), this investment was made for strategic reasons. These large industries were granted high levels of protection and produced for the domestic market. Despite these efforts, the

performance of the manufacturing industry has been poor (Schrire 1992:457).

Deteriorating employment conditions in mining and agriculture led to a shift in manufacturing development objectives. The concern of the manufacturing industry in South Africa is to provide long-term improvements in economic growth, development and employment creation (ANC 1994:87). This is done to improve the quality of life of the entire South African population.

The objective of this chapter is to outline the problems encountered by the manufacturing sector in South Africa and in the Eastern Cape in particular. This is done to obtain a better understanding of manufacturing and how the industry can create employment opportunities to benefit the South African community. The problems encountered by the manufacturing industry are more structural and macro-economic in nature. Before these problems are outlined, a brief summary of the structural constraints and macro-economic factors is given. These problems are low manufacturing output, employment, investment, poor productivity, poor trade performance and poor socio-economic conditions.

5.2 STRUCTURAL CONSTRAINTS IN THE MANUFACTURING INDUSTRY IN SOUTH AFRICA AND THE EASTERN CAPE

The structural constraints stem directly from the earlier period of rapid growth in the 1950s and 1960s. A series of events occurred that did not stimulate manufacturing development in South Africa, including the Eastern Cape during the period 1970-1990. These events were the overvalued currency, accelerated inflation, an increase in capital intensity and international isolation (IDC 1995a:4). The overvalued currency gave rise to increasing levels of protection. Accelerated inflation was fuelled by import surcharges introduced to defend the balance of payments (IDC 1995a:4). Moreover, the trend towards capital intensity was encouraged by the rise in labour costs and negative real interest rates. An examination of the structural constraints in the manufacturing industry can improve the growth and development of this sector (Mayer & Zarenda 1992:245).

The policies that eroded profits in the South African manufacturing industry were located in the trade regime (Mayer & Zarenda 1992:245). There was a high number of entrants into protected industries because of high tariff protection rates. This resulted in increased competition and in excessive product differentiation. This, in turn, reduced profits because the domestic market was small.

According to Black & Stanwix (1980:47), the principal factors which caused and perpetuated the structural crises are the import-intensive growth, bias against exports, capital-intensive industrialisation and demand constraints. Black and Stanwix argue that unequal distribution of income along racial lines "constrained the development of a more broadly-based demand to provide a major stimulus to local manufacturing". Furthermore, opportunities for import replacement are centered in the capital, intermediate goods and high technology sectors. The size of the South African market does not guarantee the efficient domestic production of such goods. Capital goods have been cheapened by subsidies and low interest rates (Mayer & Zarenda 1992:247). These goods accounted for more than 40 per cent of total South African imports during the period 1994-1998 (Department of Finance 1999:39). Moreover, the import of capital goods is expected to increase mainly due to the strong demand for extended infrastructural investment.

The objectives of the import substitution strategy were self-reliance and the establishment of corporations such as Sasol, Iscor and Mōssgas (Naudè & van Heerden 1992:133). During the 1970s, it became clear that this economic strategy had distorted the structure of the economy. This is evident from the high dependence on imported technology, capital and intermediate goods. South Africa's import propensity was 21 per cent of GDP during 1993 (Fourie et al. 1995:142). This rate remained stable during the period 1994-1998 (Department of Finance 1999:39). The import propensity of developing countries such as Mexico and Brazil is 8 per cent (Fourie et al. 1995:142). Moreover, the cost of imported machinery in South Africa is high.

According to Fourie et al. (1995:570), there is a positive relationship between domestic economic activity and imports. Imported goods and services reduce total spending on domestically produced goods and services. South Africa's imports expenditure was 20,5 per cent in 1993 (Fourie et al. 1995:143). Moreover, the share of machinery, electricity and transport in total imports was 51,7 per cent in 1993 and 54 per cent in 1998 (IDC 1998a:14).

South Africa is further faced with problems such as shortages of skilled manpower, limited markets and high levels of technology (Department of Finance 1999:14). According to Rogerson (1998:876), high technology is viewed as the saviour of a country's economic problems. In South Africa, manufacturing industries mainly rely on imported technology (Joffe et al. 1995:100). In fact, 80 per cent of new technology in machinery in South Africa is imported (Black 1985:155). Furthermore, the manufacturing industries have adapted the imported technology without the necessary know-how (Joffe et al. 1995:100). The new growth theories emphasize that manufacturing industries have to engage in learning by doing to acquire transferable skills. This enables industries to gain knowledge. Moreover, the manufacturing industries have to invest in enhancing their technological capacity. This is done in order to produce products that can adapt to changing needs of the South African community (Joffe et al. 1995:100).

The South African manufacturing industry is a net importer, because of the bias against exports created by the pattern of the South African industrial development (Mayer & Zarenda 1992:247). South Africa's share of manufacturing exports in developing countries fell from 12,6 per cent to 1,9 per cent during the period 1955-1989 (Black 1991:2). This is mainly due to high mineral exports, exchange rate policies, sanctions, high protection tariffs, the international crises of 1973, poor productivity and the high unit labour costs (Naudé & van Heerden 1992:138). Minerals including gold accounted for 55 per cent of exports in 1998 (SARB 1999a:87).

The value of manufacturing exports increased from 8,5 per cent to 12 per cent during the period 1970-1993 (Joffe et al. 1995:8). In fact, South African exports of manufacturing rose at a lower rate than those attained by most developed and developing countries. During 1993, manufacturing

exports contributed 35,3 per cent to total exports (Fourie et al. 1995:143). During the same year, the contribution of manufacturing imports to total imports was 84,8 per cent. The exports of the South African manufacturing industry are only a very small share of total output (SARB 1999a:18). This shows a lack of international competitiveness by the manufacturing industry. Manufacturing exporters in South Africa are faced with fluctuating real exchange rates (SARB 1999a:18). Moreover, as South Africa gains access to the international world, the rand is expected to depreciate as it did during 1998 and at the beginning of 1999. This enables domestic exporters to regain their competitive ability in manufacturing. According to Calitz (1997:318), import manufactures argue that a weak rand reduces the possibility of creating employment opportunities.

The import substitution policy played a significant role in the growth of the South African manufacturing sector (Fourie et al. 1995:655). This resulted in certain consumer products having to be manufactured locally. This, in turn, resulted in more imports of goods. According to Black (1991:5), the import substitution policy protected certain industries. This was done in order to make domestic production more viable. Local manufactures were less competitive internationally because they concentrated on producing for the domestic market. This led to local manufacturers experiencing inefficiency and high costs (Fourie et al. (1995:655). For example, industries such as the clothing industry were charged high costs for using domestically produced and protected textiles. This resulted in a smaller contribution by the manufacturing industry to manufacturing exports.

The international oil crises of 1973 led to high prices of imported capital, intermediate goods and a reduction in manufacturing exports (Naudé & van Heerden 1992:138). This was followed by structural changes in international trade. These changes included a shift away from metal and agricultural products towards electronics and biotechnology. This, in turn, led to unemployment in South Africa because of the abundant unskilled labour that was laid off. Moreover, the problem of unemployment occurred as unit labour costs in South Africa increased. This, in turn, caused the manufacturing industry to depend on imports (Naudé & van Heerden 1992:138).

According to Nomvete (1993:55), state and foreign investment have been mainly concentrated in the capital-intensive manufacturing industries. Moreover, the fostering of these manufacturing industries was used as a strategy to improve the situation of white workers who were heavily concentrated in the capital-intensive industry. Black labour withdrawn from the agricultural sector was unable to find employment in these industries. Thus, these workers were excluded from the process of economic growth as in the case of Taiwan and South Korea (Naudé & van Heerden 1992:139). The high level of formal sector unemployment was mainly due to capital-intensive industries and unequal income distribution (Mayer & Zarenda 1992:247). These factors had tendency to limit the market for basic commodities which are labour-intensively produced.

5.2.1 The changing structure of the manufacturing sector in South Africa and the Eastern Cape

The historical growth records of the manufacturing industry in South Africa and the Eastern Cape show that this industry experienced growth and diversification during the post-war years. According to Rostow's theory, the manufacturing industry in South Africa is approaching the maturity stage (Schrire 1992:448). This is shown by the small contribution of the manufacturing industry to GDP during the period 1911-1930. During the period 1940-1990, the contribution of the manufacturing industry rose. It, however, started to decline during the 1990's (Fourie et al. 1995:124). For instance, the share of manufacturing in GDP in South Africa increased from 12,8 per cent in 1940 to 25,4 per cent in 1990 (Fourie et al. 1995:125). Thereafter, the share of manufacturing in GDP declined to 23,7 per cent in 1998 (SARB 1999a:107). The share of manufacturing in GDP in the Eastern Cape increased from 15 per cent in 1950 to 29 per cent in 1990 (DBSA 1992:6-3-3). Thereafter, the share of manufacturing in GDP declined to 24,2 per cent in 1994 (SSA 1995:15). According to McCarthy (1988:2), structural change begins with a relatively small share of manufacturing in GDP which slowly rises as the country enters the maturity stage.

The low economic growth in the South African economy is not conducive to the creation of

employment (Department of Finance 1999:13). Growth in manufacturing employment declined from 4,1 per cent in 1975 to 0,6 per cent in 1984 (McCarthy 1988:6). Furthermore, it declined to 0,4 per cent in 1986. Thereafter, this growth increased to 0,5 per cent in 1990 (SARB 1999a:130). Since 1990, employment growth in the manufacturing industry has fluctuated. An increase of 0,6 per cent occurred during the period 1992-1996 (SARB 1999a:130). According to the World Bank (1993:265), the decreased growth of employment opportunities was well below the estimated growth of 2,8 per cent per year during the period 1980-1986. It implies that slow progress has been made in improving the standard of living of South African society at large.

According to McCarthy (1988:7), the changing pattern in the structure of the manufacturing industry is identified as the initial dominance of the consumer goods industries. It is then followed by the increasing importance of the capital goods industries. Thereafter, a balance between the industries is maintained with the capital goods industry tending to expand more rapidly. The manufacturing industry in South Africa has proceeded along the standard route of sector transformation (McCarthy 1988:8). This route was the transition from consumer goods to capital and intermediate goods or from light to heavy industry. Light industries are those which use more labour relative to capital (Todaro 1994:686). Todaro argues that heavy industries are those which use more capital relative to labour. Medium industries are those which require both a high level of labour and a large amount of capital (Abedian & Standish 1992:108).

During 1990, heavy industry made a high contribution of 30,7 per cent to total manufacturing production compared with 27,3 per cent from intermediate and 20 per cent from the light industry (Piazollo & Wurth 1992:278). Table 5.1 shows that this position was reversed during the period 1997 to June 1999. The contribution of heavy industries to manufacturing production declined from 30,7 per cent in 1990 to 24 per cent in June 1999 (SSA 1997d:6;1999c:4). The decline in the contribution is mainly due to lower manufacturing production in 20 of the 27 major divisions of manufacturing (SSA 1999c:1). In August 1999, lower manufacturing production was recorded in 15 of the 27 major divisions of manufacturing (SSA 1999c:1). The major contributors to the decline in manufacturing production were electrical machinery, basic chemicals and furniture

(SSA 1999c:1). Furthermore, increased production was recorded in the food products, textiles, and machinery and equipment industries. The iron and steel industries recorded a decrease of 0,8 per cent during 1997. The contribution of the intermediate industries rose from 33,5 per cent to 36,8 per cent during the same period (SSA 1997d:6;1999c:4). This was mainly due to large increases in the transport equipment and machinery industries during 1997. The contribution of the light industries to total manufacturing remained constant at a rate of 35,6 per cent during the period 1997 to April 1999 (SSA 1997d:6;1999c:4).

TABLE 5.1 THE PRODUCTION INDUSTRIES IN THE MANUFACTURING SECTOR IN SOUTH AFRICA FOR THE PERIOD 1990-1999.

Sector / Percentage	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999*
Light industries	20.0	19.4	19.3	22.4	28.0	30.5	30.4	35.6	34.3	36.0
Intermediate industries	27.3	27.3	27.3	28.2	30.1	30.6	29.4	33.5	36.4	36.8
Heavy industries	30.7	30.3	30.1	30.3	30.5	30.8	30.6	30.9	25.1	24.0
Other	21.9	23.0	23.3	19.1	11.4	8.1	9.7	0.0	0.6	3.2
Total	100	100	100	100	100	100	100	100	100	100

* indicates second quarter of 1999

SOURCE: SSA 1997d:5;1999c:6

Table 5.1 further shows the important trends in economic development and growth in the manufacturing sector. Production increased in this sector from 1993. In 1996, manufacturing production decreased.

Manufacturing development in South Africa focused on large scale or heavy industries in the past. It is, however, realised that focusing on heavy industries was inappropriate where there was a shortage of capital and skilled labour (Fourie et al. 1995:667). This was mainly because it led to unemployment. Manufacturing development, therefore, has to suit the local conditions in order to contribute to growth and the creation of employment opportunities. This entails the development of intermediate and light industries. These industries use capital and labour-intensive techniques of production (Todaro 1994:664).

One of the reasons for South Africa's high import dependence is the demand pattern arising from unequal income distribution (Black 1991:160). A mass market did not develop as the demand for consumer durables such as motor vehicles increased. This was mainly because a large proportion of the community had low incomes (Schrire 1992:456).

The industrial decentralization policy focused on the level of development in a few areas (McCarthy 1988:14). It originated from the separate development policy. Heavy industries were concentrated in Gauteng but with the growth of the population, light industries were also established. The Eastern Cape was one of the four regions from which manufacturing activity was decentralised. In order to curtail migration to the metropolitan areas, the government realised that the employment creation in the rural areas, especially near the Bantustans was important (Bartlett & Contogiannis 1992:98). Moreover, this resulted in the development of manufacturing industries in the border areas. The Eastern Cape experienced a period of relative prosperity similar to the other metropolitan areas during the period 1950-1960 (Driver 1998:790). This was mainly due to increases of manufacturing production. Stagnation in manufacturing was evident during the period 1970-1980 in the Eastern Cape. This was mainly due to factors such as the withdrawal of the motor vehicle industry from the area, inappropriate macroeconomic policies, tariff protection, international isolation and the industrial decentralisation policy. That is, problems experienced in the Eastern Cape were the result of national economic forces and local political policies.

The production structure of the manufacturing sector in South Africa and the Eastern Cape is

largely dependent on production techniques (CEAS1993:38). Moreover, this production structure and techniques are influenced by government action and policy. The manufacturing sector has to concentrate on using efficient production techniques in order to increase total manufacturing production (CEAS 1993:39). The Government has to encourage economically viable projects. Furthermore, an increase in the production capacity of the economy means economic growth. This can lead to the creation of employment opportunities, if the benefits of growth can reach a larger proportion of the labour force in a growing economy (CEAS 1993:39).

5.3 THE MACRO-ECONOMIC ISSUES IN THE MANUFACTURING SECTOR IN SOUTH AFRICA AND THE EASTERN CAPE

The poor performance of the manufacturing sector in South Africa and the Eastern Cape has largely been due to macro-economic problems (Bell 1995:28). This problem is not unique to South Africa. Many developing countries are faced with macro-economic instability. Macro-economic factors influencing the manufacturing sector include global recessions, debt, balance of payments constraint, political stability and inflation (Bell 1995:9). The world growth declined from 4 per cent in 1994 to 2 per cent in 1998 (Department of Finance 1999:11). Empirical evidence shows that this is mainly due to financial disturbances. The result of the decline in world growth was that foreign investors withdrew funds from the South African capital markets. Moreover, the exporters of manufactured goods were confronted with depressed prices and low demand.

During the period 1970-1990, a series of events occurred which contributed to the inability of South African manufacturers to compete in international markets. These events include the overvaluation of the currency and the dual exchange rate policy. The dual exchange rate comprised a commercial rand and the financial rand (IDC 1995:4). The value of the commercial rand was market-related and applied to all import and export transactions. The financial rand was established from the inflow and outflow of capital into and out of South Africa, apart from loans, of residents and non-residents. With the introduction of financial sanctions in 1985, the rand depreciated. While this served to stimulate manufacturing development, it gave rise to an

acceleration in inflation and disinvestment (Nomvete 1997:63). This acceleration in inflation was further increased by high protection prices. South Africa experienced large net outflows of capital during the period 1985-1993 (Fourie et al. 1995:145). These large net outflows of capital meant that exports have to be greater than imports. These capital outflows decreased as South Africa regained access to international markets in 1994. The dual exchange rate was in place up until May 1995.

The deficit on the current account of the balance of payments increased from 1,5 per cent of GDP in 1997 to 2 per cent in 1998 (Department of Finance 1999:15). In addition, the rand depreciated and imports fell during 1998. This situation showed an improved trade balance. Manufacturing development in South Africa depends on imports of capital and intermediate goods. The importing of machinery and equipment to South Africa accounted for 52 per cent of GDP, while that of motor vehicles, parts and accessories was 14 percent of GDP in 1997 (IDC 1998a:4). Therefore, the improvement in the trade balance is an important factor in sustainable growth and development.

Production price inflation rose from 2,3 per cent in March 1998 to 6,4 per cent in June 1999 (SARB 1999c:18). This was mainly due to the increase in price of imported goods, depreciation of the rand and an increase in bank loans (SARB 1999a:11;1999c:18). Moreover, the price of imported goods was influenced by increased crude oil price. Production price inflation, however, declined to 4,7 per cent in the last quarter of 1998. This was mainly due to the weak state of the domestic economy (SARB 1999a:12).

According to Hess & Ross (1997:274), a sound macro-economic policy promotes employment. In fact, factors such as low inflation and political stability attract both domestic and international investors.

5.4 PRODUCTION VOLUMES IN THE MANUFACTURING SECTOR IN SOUTH AFRICA AND IN THE EASTERN CAPE

The South African economy experienced low growth, rising inflation, an overvalued currency, sanctions and increasing socio-economic instability during the period 1970-1990 (CEAS 1993:2). These factors had a negative effect on production in the manufacturing sector in South Africa, including the Eastern Cape. Despite the fluctuations in manufacturing output, the contribution of the manufacturing industry to the GGP of, both South Africa and the Eastern Cape, was 25,4 per cent and 24,6 per cent during 1990 (Tables 3.1 & 4.1). These percentages show that the manufacturing industry made the largest contribution to output during 1990.

During the period 1993-1995, production in the manufacturing sector in South Africa grew strongly because of an increase in both domestic and international demand (SARB 1999a:107). This is shown by the increase in the physical volume of production made by the manufacturing industry (Table 5.2). Table 5.2 shows that the contribution of the medium industries production in the manufacturing sector increased more than that of the heavy industries during the period 1991-1995. This increase was slower than that of heavy industries. This shows that production in the manufacturing sector in South Africa was oriented towards heavy industries. The contribution made by light industries to production in the manufacturing sector was half that of the medium industries during the period 1991-1995. Production in the manufacturing sector in South Africa declined in 1996. The declining trend is influenced by slow growth in the world economy in general and by the restructuring of industry (Department of Finance 1999:11).

Manufacturing output in the Eastern Cape remained relatively constant at 24,2 per cent during the period 1993-1994 (SSA 1995:P3041). Despite the lifting of sanctions and tariff liberalisation, manufacturing output has not increased during this period (Hanival & Hirsch 1998:4). The major economic problems that affected production in the manufacturing sector, in both South Africa and the Eastern Cape, include the shortage of skilled manpower, the use of efficient technologies, the lack of investment, low levels of productivity and the socio-economic environment.

TABLE 5.2 THE INDICES OF THE PHYSICAL VOLUME OF MANUFACTURING IN SOUTH AFRICA BY SUB-SECTOR OF PRODUCTION FOR THE PERIOD 1990-1996

Index 1990 = 100

Sub-sector / Year	1990	1991	1992	1993	1994	1995	1996
Light industries	100	96.3	87.8	92.6	95.6	101.3	96.9
Medium industries	100	97	93.7	96.3	99.0	107.1	95.2
Heavy industries	100	93.6	88.3	87.2	93.0	104.7	97.3

SOURCE: SSA 1997b:P2012.27

A large proportion of the South African population is unskilled (Fourie et al 1995:138). This was caused to a large extent by discriminating policies such as job reservation and unequal education. The manufacturing industry in South Africa developed on the basis of its natural resources. This did not bring about sustainable growth. According to Mears (1998:2), sustainable economic growth requires the development of human resources. That is, it depends on the quality of labour (Fourie et al. 1995:138). The greatest challenge facing the manufacturing industry is that of human resource development (Hanival & Hirsch 1998:97).

The changes in the industrial structure are part of structural changes in a society as it develops. This involves a structural transition away from the agriculture sector towards the manufacturing and services sectors (Chenery 1979:334). This is the pattern of development in both South Africa and the Eastern Cape and as shown by the Lewis model (Todaro 1994:77). This pattern of

development resulted in people moving from rural areas to seek industrial jobs, but not all found jobs. This, in turn, led to unemployment. The manufacturing sector is faced with the challenge of helping to finance the socio-economic services in both the urban and rural areas. These services are significant in the improvement of the quality of life in South Africa.

The South African product markets consists of a very small number of large producers (Fourie et al. 1995:355). These producers are responsible for a large share of the total output of the manufacturing sector (ANC 1997:93). This structure, however, can constitute a hostile environment for the development of SMME's (Joffe et al. 1995:63). This is mainly because SMME's frequently confront a dominant producer as competitor. Large manufacturing industries in Japan have a better relationship with small manufacturing industries (Joffe et al. 1995:141). These large industries support the small industries in various ways. They give technical, educational, on the job training and financial support. They also encourage growth, production and employment in the manufacturing sector. Large manufacturing industries in South Africa have to encourage productive cooperation between large and small industries. This is already taking place to some extent.

5.5 EMPLOYMENT IN THE MANUFACTURING SECTOR IN SOUTH AFRICA AND THE EASTERN CAPE

The low rate of employment in South Africa and the Eastern Cape remains an economic challenge. This is mainly because unemployment leads to low levels of living and inadequate development (Todaro 1994:49). Since 1996 employment in the manufacturing sector has been declining (SARB 1999c:132). Moreover, this decline occurred in most South African industries as well as in the government sector since 1997 (SARB 1999c:132). This was mainly caused by restructuring and rationalisation.

Formal employment is estimated to grow based on the assumption of a 4 per cent economic

growth rate during the period 1998-2003 (Herald 1999:14). This is mainly due to a strong demand for goods both internationally and locally. This is one feature that causes the manufacturing industry to be favoured in developing countries. According to the Department of Finance (1999:51), employment in the manufacturing sector has to recover as the country gains competitiveness and world demand increases. South Africa has to become and remain competitive if its employment position is to recover.

Table 5.3 shows that the pattern of industrial development of regions is not the same. According to Bartlett & Contogiannis (1992:100), investment in the former independent national states such as Ciskei and Transkei mainly consisted of subsidised industries. These manufacturing industries took advantage of cheap labour and financial incentives. The objectives of subsidies and financial incentives were to generate self-sustaining growth. The decentralisation policy of the past, however, eventually led to a loss of jobs as a result of factors such as business being unable to expand, capital intensive production and closure due to rising labour costs and low productivity (Bartlett & Contogiannis 1992:101). Because of the incentives, entrepreneurs were less committed and when the incentives decreased, they withdrew.

In South Africa and in the Eastern Cape, labour-intensive manufacturing industries tend to be underdeveloped relative to capital-intensive manufacturing industries (Joffe et al. 1995:16). Employment opportunities created in the manufacturing industry often do not match the skills profile of the unemployed. That is, employment opportunities demand skilled workers and capital-intensive techniques. For example, the Eastern Cape is home to 16,4 per cent of the total population, but has a manufacturing industry that contributes 8 per cent to national employment (Table 5.3). The manufacturing industry can create more employment opportunities, especially in the Eastern Cape by encouraging more labour-intensive investment (Driver 1998:802).

Educational systems have to be directed towards the needs of the people in both urban and rural areas (Todaro 1994:274). That is, educational systems in the rural areas have to be redirected towards the needs of rural development.

TABLE 5.3: CONTRIBUTIONS TO TOTAL EMPLOYMENT IN THE MANUFACTURING SECTOR IN SOUTH AFRICA AND IN THE EASTERN CAPE IN 1994*

Industries / Percentage	RSA	EC
Food processing & tobacco	12.7	10.4
Beverages	2.5	8.5
Textiles	6.9	16.2
Clothing, leather & footwear	12.4	7.3
Wood & Furniture	7	5.8
Paper & Printing	6	4.3
Chemical, rubber, plastics, coal & petroleum products	11.6	6.6
Non-metallic minerals	5.6	5.1
Basic metals	6.5	1.6
Metals products	8.9	3.2
Machinery	10.4	5.4
Motor vehicles & transport equipment	7	24.1
Other	2.6	6.5
Sector	100	8

* the statistical data available of contributions to total employment in the manufacturing sector in the Eastern Cape (EC) ends in 1994.

SOURCE: IDC 1995a:7

Education is the most important means of securing employment in industries (Todaro 1994:372). Moreover, an individual who has completed the necessary schooling for entering the labour market can usually obtain employment in the manufacturing sector.

According to Mitchell (1998:765), of the 620 000 potential employment opportunities in labour

-intensive industries an estimated 50 000 can come from the manufacturing industry in South Africa by the year 2005. Moreover, most of the employment opportunities in tourism are seasonal and pay relatively low wages (de Beer et al. 1998:907).

Empirical evidence shows that the manufacturing industry in the Eastern Cape has a significant role to play in the economy. Table 5.4 shows that the dominance of the secondary and tertiary sectors has brought little prosperity in terms of employment and output. This is mainly due to the fact that some provinces developed at the expense of others. This led to the creation of depressed rural areas. These areas, nonetheless, are significant in terms of manufacturing employment (Table 5.4). They have a large supply of unskilled labour to cater for (SSA 1998:8). Prosperity in the province requires an industrial structure that can generate high backward and forward linkages (Hayter 1997:13). The manufacturing industry has a high combination of both linkage effects while these are low in the services sector.

Table 5.4 further shows that output in the secondary and tertiary sectors in the Eastern Cape and South Africa was higher than employment. This relationship is reversed in the primary sector. This shows the ability of the manufacturing industry to complement agriculture (Hayter 1997:13).

TABLE 5.4 COMPARISON BETWEEN EMPLOYMENT AND OUTPUT IN THE EASTERN CAPE AND RSA SECTORS IN 1994

Sector / Percentage	Output		Employment		Output/Employment	
	Eastern Cape	South Africa	Eastern Cape	South Africa	Eastern Cape	South Africa
Primary	5.6	12.2	16.3	18.8	0.34	0.65
Secondary	29.2	31.4	20.5	25.2	1.42	1.25
Tertiary	65.2	56.4	63.2	56	1.03	1
Total	100	100	100	100	1	1

SOURCE: SSA 1998:28

Agro-manufacturing industries which are more labour-intensive have to be encouraged (Focaraccio & van Wyk 1992:182). This has to be done in order to create more employment opportunities in the region.

The output/employment ratio in the primary sector was below unity in South Africa and the Eastern Cape. The secondary sector showed the highest output/employment ratio in the Eastern Cape followed by the ratio in South Africa. This shows that manufacturing in South Africa and the Eastern Cape create more employment than the other sectors. Employment can therefore be improved by reallocating resources from primary activities to secondary and tertiary activities (Truu 1971:154). Moreover, this process of reallocation has to consist of some working skills in order to contribute to growth effectively.

5.6 TRADE IN THE MANUFACTURING SECTOR IN SOUTH AFRICA AND THE EASTERN CAPE

The manufacturing sector has a high propensity to import capital and intermediate goods (Department of Finance 1999:39). For example, in Port Elizabeth, the battery manufacturing industry exported 30 per cent of its output to the United Kingdom in 1997 (IDPR 1997:69). The importing of capital and intermediate goods was encouraged by the strong sales of gold that led to an appreciation of the exchange rate (Hanival & Hirsch 1998:38). Moreover, these capital and intermediate goods are expected to continue growing due to strong demand from public corporations extending infrastructural investment.

South Africa entered into agreements with its trading partners in the past (Department of Industries, Commerce and Tourism 1983:16). These agreements included the General Agreement on Tariffs & Trade (GATT) now the World Trade Organisation (WTO), General Export Incentive Scheme (GEIS), the World Bank and the International Monetary Fund (IMF). The fact that RSA was not allowed to raise custom tariffs above specified levels is of significant importance to the development of the manufacturing industry in South Africa.

Trade performance in South Africa has been characterised by poor performance of exports in the manufacturing sector (Joffe et al. 1995:49). South Africa's exports of technology-intensive goods are low (Fourie et al. 1995:141). World trade is increasingly dominated by manufactured commodities. It is also faced with financial disturbances such as the withdrawal of funds from capital markets and high interest rates (Department of Finance 1999:13). South African manufacturing exporters, therefore, cannot escape the impact of the international financial disturbances (Department of Finance 1999:13). This has contributed to a reduction in demand, but an increase in more appropriate technology in South Africa.

One of the major policy decisions in economic development is trade orientation, especially the degree to which industrialisation is promoted through international trade (Hess & Ross 1997:436). Empirical evidence shows that exports of the manufacturing industry in South Africa have increased since 1993 (Figure 3.6). This stimulates manufacturing production and employment. In addition, capital and intermediate goods can be imported at a lower cost than that of locally produced goods (Hess & Ross 1997:438). Moreover, the composition of world exports is expected to change from light manufacturing to more heavy manufacturing with economic development. This trend has been reversed in South Africa. It has advantages for employment creation and is more appropriate for South Africa given its labour composition.

An anti-export bias and import dependence of capital goods were significant in South Africa during the 1970's (Mayer & Zarenda 1992:247). In order to reduce these two issues, tax concessions, import duty rebates and cash grants were offered to exporters. Despite these export incentives, exports in the manufacturing sector did not increase significantly. According to Black, Hartzenburg & Standish (1997:112), exports enable the industry to achieve economies of scale through increasing profits. During 1990, the General Export Incentive Scheme (GEIS) was established (Hanival & Hirsch 1998:40). This scheme was also unable to encourage industries to start exporting or to export significantly more. Instead those industries already exporting were rewarded. This was mainly due to factors such as trade sanctions and the overvaluation of the exchange rate.

During 1996, South Africa began liberalising its trade at a faster rate than it had previously done (Department of Finance 1999:39). This resulted in increased competition in the domestic market. This, in turn, forced manufacturers to restructure their production processes. The increasing competition has an impact on employment (Department of Finance 1999:39). Moreover, if the price of goods falls, the demand for goods rises. Manufacturing industries can respond by increasing employment and production.

The DTI realises that the anti-export bias does not encourage manufacturing exports. It has put some programmes such as regional development, bilateral economic relations and multi-lateral trade relations in place (Hanival & Hirsch 1998:41). Trade between South Africa and its neighbours is important to the economy. Relations between South Africa, the World Trade Organization (WTO) and the European Union (EU) are important, because the EU and the WTO are South Africa's main sources of investment capital (Hanival & Hirsch 1998:41). According to Todaro (1994:510), less developing countries have to engage themselves in economic integration. Furthermore, economic integration encourages rational division of labour among countries. These countries obtain little benefits from division of labour by themselves. Economic integration enables countries to provide for a large domestic market and lower the production costs of industries through economies of scale (Todaro 1994:510).

5.7 PRODUCTIVITY IN THE MANUFACTURING SECTOR IN SOUTH AFRICA AND THE EASTERN CAPE

One of the major challenges facing the manufacturing sector is to increase productivity (Joffe et al. 1995:21). Both capital and labour productivity in the South African manufacturing industry are relatively low (Table 5.5). Productivity is influenced by factors such as education and training, the inefficient use of resources, trade, political uncertainty, union activity, high technology and low worker morale (Barker 1992:68).

Table 5.5 shows that the manufacturing industry in South Africa has experienced low productivity

(Table 5.5). This contributed to low growth and employment (Joffe et al. 1995:187). This is mainly because of poor basic and task-specific skills needed for production. These poor skills are also as a result of the poor education standards attained in South Africa and in the Eastern Cape. For example, the proportion of the economically active population in the workforce was 71 per cent in South Africa and 59 per cent in the Eastern Cape in 1995 (SSA 1998:15). Some manufacturing industries have introduced basic adult education in order to improve the poor education standard (Joffe et al. 1995:189). South Africa and the Eastern Cape, however, need a workforce that is technologically skilled in order to be internationally competitive (Joffe et al. 1995:195).

TABLE 5.5: PRODUCTIVITY AND EMPLOYMENT IN THE MANUFACTURING SECTOR IN SOUTH AFRICA DURING THE PERIOD 1988-1997

Index 1990 = 100

Year	Capital productivity	Labour productivity	Multi-factor productivity	Employment numbers
1988	108.4	102.3	104.9	1 503 500
1989	107.3	103	104.9	1 513 900
1990	100	100	100	1 517 200
1991	92.6	97.5	95.2	1 485 000
1992	87.4	96.8	92.4	1 447 200
1993	85.2	95.7	90.7	1 466 600
1994	84.6	98.4	91.8	1 461 600
1995	87	105.6	96.1	1 465 500
1996	83.6	104.5	93.4	1 466 500
1997	82.7	113.8	96.2	1 409 202

SOURCE: NPI 1998d:P.002

Table 5.5 shows that productivity in the manufacturing sector showed signs of recovery in 1994 and 1995. This contributed to an increase in employment. Table 5.5 further shows that capital productivity declined from 83.6 in 1996 to 82.7 in 1997. This was mainly due to the increase in capital intensity of production in South Africa (Fourie et al. 1995:140). Although productivity increased between 1996 and 1997, it has not been accompanied by an increase in employment opportunities. This shows the failure of the market to invest in human resource development (Joffe et al. 1995:192). It is important that management and trade unions in the manufacturing sector recognise the significance between investment in human resource development and worker productivity. This can lead to the creation of more employment opportunities in South Africa and the Eastern Cape. Unrest, strikes and union behaviour can cause the opposite to occur.

Low growth in productivity is not unique to South Africa. Manufacturing productivity has been low in countries such as the US, West Germany and Japan in the 1980's and 1990's (Hayter 1997:429). For example, manufacturing productivity in West Germany was 4 per cent between 1964 and 1973, and 2,4 per cent between 1983 and 1992 (Hayter 1997:429). During the same periods, manufacturing productivity in Japan declined from 9,6 per cent to 5,7 per cent. South Africa has to try to emulate Japan rather than the other countries. There is scope for improvement of South Africa's low productivity rate.

5.8 INFRASTRUCTURE AND THE MANUFACTURING SECTOR IN SOUTH AFRICA AND THE EASTERN CAPE

Manufacturing activities require access to infrastructure, namely economic and social overhead capital (Hayter 1997:92). Economic overhead capital consists of infrastructure such as roads, railways, port facilities, power lines and water. Social overhead capital consists of infrastructure such as schools, universities and libraries. Infrastructure is very expensive to build but once it is established, it is a significant source of growth and development. That is, it is able to attract new manufacturing investment.

Infrastructure is vital to economic growth and for the transformation of a society from traditional to modern society (Rostow 1960:12). In South Africa and the Eastern Cape, infrastructure is marked by imbalances. This is due to the unequal distribution of manufacturing activity. According to Bartlett & Contogiannis (1992:97), most infrastructure in decentralised areas is underdeveloped. Moreover, maintenance of this infrastructure is insufficient. The former Independent National States in the Eastern Cape are confronted by high transport costs, a lack of paved roads, electricity, water, housing, services and communications (SSA 1998:41). Investors consider these to be a major disadvantage. The government and the private sector are trying to address these infrastructural problems. In fact, Telkom is closing the gap in telecommunication services by providing telephone services in remote rural areas (Herald 1998:3). Furthermore, the government is addressing other infrastructural issues. If the culture of non-payment can be broken, more services can be provided.

5.9 HEALTH, ENVIRONMENT AND THE MANUFACTURING SECTOR IN SOUTH AFRICA AND THE EASTERN CAPE

Development of adequate health care is important for the development of people and human capital (DBSA 1991:1). It is significant in improving the quality of life of people. The poor socio-economic conditions in South Africa and the Eastern Cape such as malnutrition, lack of health infrastructure and diseases such as cholera, typhoid fever and aids affect the working ability of workers (SSA 1998:46). Health care services differed in the former Independent National States in the Eastern Cape (Department of Health and Welfare 1996:9). The former Ciskei made better use of limited financial resources and developed primary health care. The former Transkei's resources such as staff, maintenance and lack of financial resources were more inadequate than those of the former Ciskei. The manufacturing industry, however, plays an important role in providing adequate health care to their employees so that they can be more productive.

Historically, manufacturing industries, especially heavy industries such as chemicals and iron and steel have been polluting the air and water (Hayter 1997:96). Moreover, these industries have

been a source of health problems and environmental damage (Hayter 1997:96). Furthermore, developing countries have done little to prevent environmental damage. South Africa has to provide environmental legislation that requires existing manufacturing and new industries to incorporate technology to reduce pollution. According to Todaro (1994:353-354), waste management and recycling industries can be used to create employment opportunities.

5.10 SUMMARY AND CONCLUSIONS

The economies of South Africa and the Eastern Cape are dominated by a shift from primary production to secondary and tertiary production. In the past, the secondary sector, especially the manufacturing industry has accounted for an increasing share of employment both in South Africa and in the Eastern Cape. The contribution of this industry to employment has declined. This shows that the manufacturing industry is facing major problems. These problems contribute to inappropriate employment and growth. These problems include low production levels in the manufacturing industry, inadequate investment, low productivity, poor trade performance and socio-economic conditions.

The problems encountered by the manufacturing industry are structural and macro-economic problems. They originate mainly from the earlier periods of growth of the manufacturing industry. Factors such as sanctions, unfavourable industrial policies, capital-intensive production methods, inadequate infrastructural services, global economic recession, tight exchange controls, tariff protection and accelerated inflation have created unfavourable external conditions.

Historically, manufacturing industries in South Africa have followed an import-substitution policy which protected its domestic markets to a large extent. Trade was more difficult for South Africa due to international sanctions. This resulted in high tariffs and protection. This, in turn, made the South African manufacturing industries uncompetitive and inefficient.

The structural constraints experienced by the manufacturing industry in South Africa indicate that

state involvement in the economy is important. The South African government and the business community have realized the damaging effects of past policies in the economy. They have reduced protection and high tariffs, and have relaxed exchange controls in order to improve the competitiveness and attractiveness of the manufacturing industries in South Africa and the Eastern Cape. This has to lead to more growth, employment and development.

The manufacturing industry in South Africa and the Eastern Cape has performed poorly. It is argued that an improvement in competitiveness can improve the performance of this industry. This improvement can be achieved through labour-intensive production. In the past, the development of labour-intensive production in decentralised areas had little impact upon unemployment. This was mainly due to factors such as separate development, use of capital-intensive industries and the regional policy. Improved manufacturing industry performance has to lead to increased employment opportunities.

The relative decline in manufacturing in South Africa and the Eastern Cape is worsening the unemployment problem. The financial sector in South Africa contributes more to the GDP of the economy than manufacturing. Employment in the primary sector both in South Africa and the Eastern Cape is not estimated to create employment opportunities. The tertiary sector alone has limited employment opportunities. Most employment creation in South Africa and the Eastern Cape centers around the manufacturing industry because it is the income generating industry most closely integrated with the primary and tertiary sectors. This close integration has to lead to growth and development.

One major cause of the decline in manufacturing employment was the weak demand of goods and services both locally and internationally. This continuous decline arises from changes in domestic and international policy structures.

The manufacturing industry in South Africa and in the Eastern Cape has to use its resources efficiently in order to create employment opportunities. Manufacturing industry development has

to involve natural, physical and human resources. These resources are significant in sustainable economic growth and development. They are the resources which cause an expansion in the productive capacity of an economy. In addition, manufacturing industries have to use available labour and develop technology to suit local conditions.

This chapter shows that the manufacturing industry in South Africa and the Eastern Cape cannot be seen in isolation from the broader economy. Development implies an improvement in the socio-economic structure of production. It is a process of structural change. Structural changes occurring in the economy bring out continuous change in the manufacturing industry. Aspects which have to be restructured include human resource development, small business development, regional development, global markets and employment creation opportunities. These aspects contribute to economic growth and development and form the basis of the next chapter.

CHAPTER 6

SUMMARY OF MAIN FINDINGS AND RECOMMENDATIONS ON THE MANUFACTURING INDUSTRY IN SOUTH AFRICA AND IN THE EASTERN CAPE**6.1 INTRODUCTION**

The manufacturing industry in South Africa and the Eastern Cape is undergoing a change in direction and in methods of development. Historically, the industry was concerned with self-sufficiency for strategic reasons (IDC 1995a:i). Moreover, mineral wealth encouraged the creation of an uncompetitive manufacturing industry. Manufacturing development has to concentrate on providing long-term improvements in employment and wealth in South Africa and the Eastern Cape. This is mainly due to the deteriorating conditions in the mining and agricultural industries (IDC 1995a:i). Todaro (1994:50) states that the majority of people in developing countries live in rural areas and depend on the agricultural sector. Although the developing countries rely on the agricultural sector, employment opportunities in this sector are limited (Focaraccio & van Wyk 1992:187). The implications are that alternative development has to be used in order to create employment opportunities and to accelerate economic development. The viable option is to develop the industrial sector (Focaraccio & van Wyk 1992:188). Empirical evidence shows that the manufacturing industry serves as the engine of growth in many economies. This industry shows the fastest growth in output, employment and productivity (Thirwall 1994:60). Economic planners and decision-makers, therefore, give priority and preference to the development of the manufacturing industry in order to stimulate sustainable economic growth and employment.

The South African economy, however, is not performing well and the manufacturing industry is identified as the main culprit (Joffe, Kaplan, Kaplinsky & Lewis 1995:5). Low levels of employment and productivity can be traced to the manufacturing industry. The direction and method of development of the manufacturing industry has to take into account the framework and

objectives of the industry in order to contribute to growth, employment and development (IDC 1995a:i). The framework of the industry has key areas, namely, macro-economic, human resource development, investment, technology, trade, small, medium and micro-enterprises, labour and industrial policies. The industrial policy objectives include employment creation, increased investment, raised productivity and improved trade performance.

The objective of this chapter is to provide the most important findings and recommendations regarding the manufacturing industry in South Africa and the Eastern Cape in order to obtain a better understanding of how the manufacturing industry contributes to long-term growth, employment and development. Before the framework of the manufacturing industry is outlined, however, it is important to highlight certain aspects of the industry. These include the role of the manufacturing industry in the economic structure, the utilisation and availability of resources, the demand factors and the stages of the competitive advantages of the manufacturing industry. The framework is outlined in the following paragraphs.

6.2 THE ROLE OF THE MANUFACTURING INDUSTRY IN THE ECONOMIC STRUCTURE OF SOUTH AFRICA AND THE EASTERN CAPE

The South African economy performed poorly during the early 1990's (Department of Finance 1999:8). This was mainly due to South Africa's isolation from international markets. Since 1993, the economy has experienced a period of sustained growth (Hanival & Hirsch 1998:4). This was mainly due to the lifting of sanctions during 1993. Although this growth phase has been sustained over the last four years, it does not compare favourably with trends in East Asia. During the period 1994-1997, GDP in South Africa had an annual growth rate of between 1,7 per cent and 3,4 per cent (Hanival & Hirsch 1998:4). The GDP of South Africa's competitors in East Asia such as China, Indonesia, Korea, Malaysia and Thailand had an annual growth rate of between 7 per cent to 13 per cent during the same period (Hanival & Hirsch 1998:4).

The scale of manufacturing activities illustrates the importance of the industry (Rustomjee

1992:322). This was mainly due to the fact that the primary sector cannot provide work for the growing population of South Africa and the Eastern Cape (SARB 1999c:132). Moreover, the share of agriculture and mining in GDP has declined since the 1960's. The total contribution of manufacturing to GDP was more than that of agriculture and mining during the period 1990-1998 (SARB 1999a; SARB 1999c:107). The share of the service sector in GDP has, meanwhile, increased (SARB 1999a; SARB 1999c:107).

The South African manufacturing industry developed alongside the poor performance of the South African economy (Hainval & Hirsch 1998:16). Despite its large contribution to GDP, the manufacturing industry in South Africa performed below its potential. This is mainly due to the problems experienced by this industry. These problems include the low level of commitment by industry to human resources development, uncompetitive practices, shortage of capital and skilled labour, low technological ability, sanctions and lack of an industrial environment which encourages investment and growth (IDC 1995a:41). These problems caused the manufacturing industry to be an obstacle to economic and social development in South Africa. A new approach to industrial development was, therefore, developed by the Industrial Strategy Project, the ANC-linked Macroeconomic Research Group, DTI and the IDC.

The manufacturing industry in South Africa is a net consumer of foreign exchange and is capital-intensive (Fourie et al. 1995:140). This is shown by the fact that imports in South Africa mainly consist of capital and intermediate goods. This indicates that the growth of the manufacturing sector means an increase in imports (Fourie et al. 1995:141).

Development literature argues that industrial development has been the material foundation upon which advanced societies have been built (Mayer & Zarenda 1992:224). Moreover, better living standards and greater wealth are closely connected to industrialization. The manufacturing industry has to specialize and focus on increasing human and social capital (CEAS 1993:256). This is done in order to meet the basic needs of the South African population and to enable the industry to compete in both domestic and international markets (Joffe et al. 1995:45). This industrial strategy

is not unique to South Africa. For example, the industrial strategy pursued by Taiwan and Korea promotes human development (Schive 1995:10).

6.3 THE UTILISATION AND AVAILABILITY OF RESOURCES IN THE MANUFACTURING SECTOR IN SOUTH AFRICA AND THE EASTERN CAPE

The way in which South Africa has applied its resources, legislation, production techniques, capital and labour is characteristic of an industrially developed country (Department of Industries, Commerce & Tourism 1983:25). This situation led to declining employment levels in the manufacturing industry. In order for South Africa to attain more growth and create employment opportunities, it needs to improve the performance of this industry. This requires manufacturing development to be in line with the availability and capacity of the resources of the country (Department of Industries, Commerce & Tourism 1983:25).

The manufacturing industry in South Africa and the Eastern Cape has to reconsider its approach to the utilisation of resources (Joffe et al. 1995:19). According to the Department of Industries, Commerce & Tourism (1983:23), the growth of the manufacturing industry has been mainly achieved by mobilising more resources in production compared to raising productivity. This is characteristic of an early stage of industrial development. This characteristic is not unique to South Africa but occurs in many developing countries (Gillis et al. 1996:26).

The manufacturing industry has to alleviate the shortage of skilled labour (Naudé & van Heerden 1992:138). This can be achieved through education and training. Since the Eastern Cape has a high illiteracy rate, especially amongst the youth, training programmes have to be developed (SSA 1998:8). According to the Department of Industries, Commerce & Tourism (1983:26), higher manufacturing output can be achieved if the standard of workers is improved.

The manufacturing industry in South Africa and the Eastern Cape has to increase its capital-intensity because the country and the province have a surplus of unskilled labour and a shortage

of capital (Fourie et al. 1995:140). Although South Africa has to keep up with international technological developments in order to be internationally competitive, it has to adapt technology to suit local conditions (Joffe et al. 1995:98). The technology used has to suit labour-intensive methods of production in order to obtain more employment. According to the Department of Industries, Commerce & Tourism (1983:29), a technological policy has to set the process of industrial innovation and technical improvement in motion by utilising capital and manpower.

The pattern of industrial development in South Africa indicates that heavy industry is more developed than light industry (Joffe et al. 1995:16). This is shown by the fact that the share of the manufacturing industries capital stock in textile, clothing, leather and footwear has declined. Moreover, heavy industry is more capital intensive. South Africa needs an industrial policy which supports light industries and the growth of SMMEs (Joffe et al. 1995:17). In this way, South Africa and the Eastern Cape can be able to use the available resources more efficiently (Department of Industries, Commerce & Tourism 1983:28).

6.4 THE DEMAND FACTORS IN THE MANUFACTURING SECTOR IN SOUTH AFRICA

The structure of the South African economy was distorted in the past (Naudé & van Heerden 1992:132). Distortions were evident from the high import propensity, the differences in the distribution of income and wealth, and the failure of the manufacturing industry to develop export markets. The manufacturing industry has to restructure because these distortions are still evident. This restructuring can improve the South African community's standard of living.

The pattern of demand arising out of the highly skewed income distribution has limited the development of a broad mass market in South Africa (Naudé & van Heerden 1992:135). Furthermore, the development of the market for consumer durables such as motor vehicles and machinery has increased. Empirical evidence shows that lower-income groups spend a large portion of their income on non-durable goods such as food and clothing than higher-income

groups. According to the Department of Industries, Commerce & Tourism (1983:34), the development of a market for non-durable and semi-durable consumption goods such as clothing, housing and simple manufactured goods has to be investigated because these goods are more labour-intensive and capital saving than durable consumption goods. This will, in turn, lead to economic growth and employment as the production structure of the manufacturing industry develops (CEAS 1993:34). According to the Evening Post (1999:13), new employment opportunities in the textile, clothing and leather industries increased from 211 883 to 220 174 during the second and third quarter of 1999.

Productivity in South Africa has been linked to skill shortages (Naudé & van Heerden 1992: 138). For example, Taiwan and South Africa produced the same number of engineers during 1960. Currently, Taiwan produces ten times more engineers than South Africa (Schive 1995:31). Increases in wages have to be accompanied by higher productivity in order to contribute to growth, employment and development (Naudé & van Heerden 1992: 139). If labour costs increase without productivity, producers are encouraged to utilise more capital-intensive production methods. This, in turn, leads to more unemployment (CEAS 1993:43).

Apartheid policies placed restrictions on the movement of labour from homelands to urban areas (Naudé & van Heerden 1992:139). These restrictions provided reservoirs of unskilled and cheap labour, leading industrial decentralization. This, in turn, resulted in manufacturing activity being concentrated in metropolitan areas such as Port Elizabeth/Uitenhage and in economic, social and political pressure on these cities. In order to relieve the cities of these pressures, a more even distribution of manufacturing activity is needed.

It is clear from the above discussion that the manufacturing sector in South Africa needs fundamental restructuring. This restructuring has to be shown in the type of industrial policies used. This has to enable the manufacturing industry to compete internationally and to create employment. The DTI is responsible for administering five key pillars of industrial development (Hanival & Hirsch 1998:21). These pillars include human development, investment support, trade

facilitation, small business promotion, technology promotion and innovation support. Furthermore, these pillars have been designed to accelerate manufacturing development. Before the key pillars are outlined in the following paragraphs, the stages of competitive advantages are explained below.

6.5 THE STAGES OF COMPETITIVE ADVANTAGE IN THE MANUFACTURING SECTOR IN SOUTH AFRICA AND THE EASTERN CAPE

Industrial development in South Africa and the Eastern Cape has to be designed to achieve RDP objectives. These objectives include the development of forward linkages amongst primary commodity and manufacturing industries and labour-intensive manufacturing industries (ANC 1994:92). These objectives are related to sustainable employment creation and industrial growth. Industrial development, however, has to create an enabling environment characterized by realistic exchange rates and policies that support the accumulation of capital, skills and technology (IDC 1995a:10). In addition, this situation has to accommodate the development of the competitive advantage.

According to the IDC (1995a:10), countries commence international competition at the *factor-driven stage*. They draw assistance from basic factors such as cheap labour and natural resources. Furthermore, these countries employ modern and efficient methods of competing such as using more skilled labour and better infrastructure facilities. This is called the *investment-driven stage*. This stage enables countries to compete in the standardized, price sensitive segments of more sophisticated industries. Countries, however, are unable to compete in product differentiation and innovation at this stage. If countries can compete on this basis, they have reached the *innovation-driven stage*. Finally, countries reach a stage of competitive advantage in which economic vitality declines. This is called the *wealth-driven stage* (IDC 1995a:10-11). Furthermore, this stage focuses on wealth distribution rather than wealth creation.

Most countries never progress further than the factor-driven stage because they are unable to

expand local demand, upgrade factors and develop domestic-related and support industries (IDC 1995a:11). Consequently, the manufacturing industry in South Africa and the Eastern Cape had developed on the basis of its natural resources. Its contribution to employment shows that development on the basis of natural resources is no longer sufficient for sustainable economic growth. The time has passed when natural capital was considered infinite relative to human capital (Mears 1998:259). At present, growth requires human resource development. Investment in appropriate and improved skills development enhances the manufacturing industry's labour absorption capacity and competitive advantage (IDC 1995a:12).

Despite abundant unskilled labour, South Africa and the Eastern Cape are slow in developing skills-intensive industries. According to the IDC (1995a:11), the upgrading of skills takes time to bear fruit. This means that the manufacturing industry has to use the available natural and human resources. According to Mears (1998:260), investment in both physical and human capital relieves the pressure on the natural stock of capital.

Human resource development is regarded as significant in economic development and the implementation of the RDP (IDC 1995a:41). Moreover, it is important in the creation of an environment which enables viable labour-intensive manufacturing development and employment growth. This situation contributes to the satisfaction of basic needs in South Africa and the Eastern Cape (IDC 1995a:8). The manufacturing industry has to be aware of the fact that a coherent human resource development strategy is an essential component in the competitive drive. Productivity is expected to follow from human resource development and the utilisation of existing resources (IDC 1995a:viii).

The National Qualifications Framework (NQF) established the South African Qualification Authority (SAQA). SAQA ensures that the quality of education and training and access to education and training opportunities are improved (IDC 1995a:42). The development of human resources to make use of technology is important. Programmes such as the Technology and Human Resources for Industry Programme (THRIP) focuses on the human resources aspect of

technological development. It aims to cultivate a technology culture among school students and develop tertiary research and training projects (Hanival & Hirsch 1998:).

In the short to medium term, South Africa has to complete the transition to the investment-driven stage in order to compete internationally (IDC 1995a:13). This requires government investment in both human and physical capital. Thereafter, industrial policies have to change as industrial development progresses. This has to be done in order to facilitate and promote the evolution of the industrial sector towards the innovation-driven stage. Industrial policy in South Africa has to ensure that the progression through the various stages of industrial development occurs in such a way that the existing gaps between income and wealth are narrowed. This is reflected in the RDP's approach to human resources, investment, industrial and trade policies. These policies are discussed in the following paragraphs.

South Africa has to obtain a high level of international competitiveness if it is to achieve and sustain higher economic and employment growth rates (IDC 1995a:12). These rates are required to secure a stable society free of poverty. In the *long-term*, *the government* aims to improve manufacturing development by making available supply-side measures which target activities which lead to improved factor capabilities. According to the IDC (1995a:12), these measures focus on human resource development, technological capacity development and productivity.

6.6 THE POLICY SHIFT IN THE MANUFACTURING SECTOR IN SOUTH AFRICA AND THE EASTERN CAPE

Policy reforms cover all spheres of economic policy (IDC 1995a:19). This is confirmed by economic policy reform studies undertaken by countries aiming at international success and increased economic growth and development rates. There are five policy areas which are significant in the transformation of the policy environment. These are macroeconomic, trade, small and medium-sized business development, labour market and industrial policies.

6.6.1 Macroeconomic policy and the manufacturing sector in South Africa

A stable macroeconomic environment is a necessary condition for trade and industrial policies that generate economic growth and development (IDC 1995a:21). This means that the macroeconomic policy has to create the environment within which the manufacturing industry operates. Inherited domestic macroeconomic conditions set a framework within which the restructuring of South Africa's industry has to operate (IDC 1995a:21).

Investment in South Africa was in the sectors in which the country did not have a comparative advantage and yielded limited benefits in terms of externalities and spillovers for the manufacturing sector (Hanival & Hirsch 1998:4). For example, Sasol invested in the petrochemical field. Moreover, there were little benefits from industries with positive externalities such as Iscor in the steel industry. This was mainly due to the uncompetitive behaviour in manufacturing industries. Tariff protection supported uncompetitive behaviour which resulted in slower growth and a large debt burden (IDC 1995a:20).

The macroeconomic policy-makers have achieved significant success in stabilising the South African economy since 1990. These successes include improved discipline in fiscal policy which led to a reduction of inflation, unification of the dual exchange rate and scrapping of import surcharges. (IDC 1995a:20). Furthermore, the key factors in achieving macroeconomic stability are fiscal discipline, competitive tax rates and social investment. There are areas in which macroeconomic policy has not been successful. These include the declining employment in manufacturing and the inadequate level of savings which has negative implications for the financing of the required levels of investment (IDC 1995a:21).

6.6.2 Investment support in the manufacturing sector in South Africa

Presently, South Africa's industrial policy has been drafted upon the recognition of a strong mutually reinforcing relationship between investment, growth and development (IDC 1995a:12).

Industrial policy previously focused on increasing private sector investment. The emphasis has been broadened to include the most important qualitative factors attached to investment. These include the quality of labour, technology, social stability and international relations. Industrial policy has to encourage private sector investment in the sectors which are likely to make significant contributions to the realisation of the growth and development ideals expressed in the RDP (ANC 1997:57).

There is a linkage between RDP-related investment and economic growth and development (IDC 1995a:17). For example, infrastructural spending on housing, electricity and water involves increased aggregate demand and economic growth. Public sector investment has to bring in significant amounts of private sector investment. The public and private investment, however, can be maintained if adequate resources are available to finance it (IDC 1995a:17). Public and private sector investment spending can be coordinated from a locational perspective (IDC 1995a:18). For example, location decisions of government-supported housing and electricity projects have to coincide with the location decisions of industrial investments which create jobs.

South African products are not regarded as internationally competitive (IDC 1995a:i). In addition, South Africa has become an unreliable supplier to world markets. This was mainly because of the fact that manufacturing industries were encouraged to produce for the highly protected domestic market in the past. Over the past five years, manufacturing industries have been encouraged to invest in internationally competitive products and processes (Hanival & Hirsch 1998:4).

6.6.2.1 Current investment policies in the manufacturing sector in South Africa

The direct investment promotion programmes by the DTI consist of the SDI's, IDZ, SMME's and the Tax Holiday Scheme (Hanival & Hirsch 1998:25). These programmes aim to develop industries in specific locations for economically strategic reasons such as unfolding the potential of both underdeveloped and undeveloped areas and industrial clusters. These aims have a redistribution component (Hanival & Hirsch 1998:24). The investment programmes are outlined

in the following paragraphs.

6.6.2.2 Spatial Development Initiatives (SDI's)

The private sector plays a significant role in stimulating employment through investment (Jordan 1998:717). SDI's are vehicles used by government to attract private sector investment in specific regions (Hanival & Hirsch 1998:26). They are based on the idea of regional agglomeration which refers to the tendency of manufacturing industries to be concentrated in relatively confined geographical areas. This occurs due to the fact that one industry is dependent on other industries. Furthermore, SDI'S are based on the notion that basic infrastructure such as roads, electricity, airports and water is important in order for private investors to invest in profitable manufacturing industries.

6.6.2.3 Industrial Development Zones (IDZ's)

The theories of growth and development emphasize the attraction of large scale investment to industry. The Coega IDZ aims to attract manufacturing industries that have strong linkages with the local economy (Pakes 1998:31). This has to be done to increase growth, employment and strengthen the local economy (Hanival & Hirsch 1998:29). IDZ's have to be located within SDI regions to enable the two programmes to link. The incentives to foreign investors include location, physical zone qualities, export incentives such as exemption from property and local taxes within the IDZ, unrestricted access to duty free inputs, exemption of VAT on inputs of IDZ companies and export credit guarantees, administrative support, institutional framework and advanced labour relations (Hanival & Hirsch 1998:30).

The tax holiday scheme is available to local and foreign firms who invest in plant and machinery exceeding R3 million (Hanival & Hirsch 1998:25). Moreover, the scheme consists of three elements which provide potential industrialists with two-year tax holidays for each component complied with spatial location, human resource remuneration and industry type. According to the

IDC (1995a:47), tax holiday schemes have become a fundamental part of the global competitive system because they are used by the Newly Industrial Countries (NIC's). Furthermore, these schemes aim to encourage more labour-intensive investment in priority manufacturing sectors in South Africa and its regions such as the Eastern Cape.

Industrial Development Zones have to be located close to harbours or airports which provide transport linkages and infrastructure (Hanival & Hirsch 1998:31). A human resource development facility has to be located in IDZs in order to develop human resource capacity. This facility can be based in the IDZ administrative unit and its development programme can be devised with the help of the Department of Labour, the DTI and other training institutions.

6.6.3 Small medium micro-enterprises (SMMEs) in the manufacturing sector in South Africa

Global competition and the shift towards service-oriented activities mean that opportunities for job creation within large companies are diminishing (Hanival & Hirsch 1998:64). Presently, SMME's play an important role in absorbing labour. Consequently, they are viewed as prime drivers of economic growth and job creation in both industrialized and developing countries (Hanival & Hirsch 1998:64).

Empirical evidence shows that 75 per cent of new jobs in South Africa are generated by SMME's. Despite this trend, investment in SMME's is inadequate to stimulate growth levels required by GEAR (Hanival & Hirsch 1998:65). Moreover, only 2,6 per cent of investment capital flows is received by SMMEs. The challenge of the current small business policy is to achieve greater investment in new SMME ventures thereby ensuring their survival. The Centre for Small Business Promotion (CSBP) was established within the DTI to take responsibility for the co-ordination of small business strategies. According to Hanival & Hirsch (1998:66), one of the aims of the small business strategies is to contribute to job creation and economic growth. The Centre for Small Business Promotion monitors co-operation between different government departments in matters

relating to small business support and relies on close cooperation between the Ntsika Enterprise Promotion Agency (Ntsika); Khula Enterprise Finance Limited (Khula) and the National Small Business Council (NSBC). Close cooperation ensures that SMME's are provided with training, linkages and financial support (Hanival & Hirsch 1998:66).

6.6.4 Industrial policy in South Africa

The RDP states that manufacturing development in South Africa has to be in line with RDP objectives (ANC 1994:87). Firstly, the government has to support light manufacturers which show potential to survive without protection. Secondly, the government has to support the development of agro-manufacturing industries which are more labour-intensive and which create employment directly or indirectly. Lastly, the government aims to raise productivity through human resource development, work reorganization, workplace democratization and technological development.

South Africa faces the challenge of developing an industrial policy aimed at improving competitiveness and promoting investment. The aim is to restructure the manufacturing industry which, involves developing new industries, revitalizing sensitive industries and investing in internationally competitive industries (IDC 1995a:36). A new industry is regarded as any industrial activity that is being undertaken in an economy for the first time and is intended to supply both the international and the domestic markets (IDC 1995a:37). Moreover, new industries have to meet certain considerations. These include the following:

- Industry has to contribute to the achievement of South Africa's social objectives as outlined in the RDP:
- Industry has to have a strong potential for becoming competitive in world markets, and:
- Industry has to be able to create sustainable employment opportunities in the long-term.

Sensitive industries are those which need restructuring in order to be internationally competitive

(IDC 1995a:38). Moreover, these industries are labour-intensive or form part of labour-intensive clusters. For example, the textile industry is part of the textile and clothing cluster. These industries need assistance in order to reduce unemployment which occurs as a result of technological upgrading. Assistance to these industries can result in a net employment gain. This gain can be achieved by developing and expanding competitive industries within the wider cluster (IDC 1995a:40). Moreover, industries considered competitive in international markets are those which add further value to mineral and agricultural products prior to being exported. Those with the potential to establish themselves in export markets in a sustainable way are found in manufacturing sector (IDC 1995a:40). This indicates that the development of non-traditional exports introduces a strong element of development based on dynamic competitive advantages, where improved skills, technology and innovativeness determine competitiveness.

6.6.5 Technology policy in the manufacturing sector in South Africa

In developing countries, technological development has been left to the market (Hanival & Hirsch 1998:45). Empirical evidence shows that if this approach is followed, the level of investment in new technological advancements has to be less than is socially optimal. The government needs to support technological development (Hanival & Hirsch 1998:46). This is justified by the endogenous growth theories. Technological development is supported by governments of industrialized countries (Hanival & Hirsch 1998:46).

Investment in human resources and technological innovation are the two important pillars of technological development (Hanival & Hirsch 1998:46). Human capital can be increased in various ways (IDC 1995a:16). Firstly, it can be increased through education and training. Secondly, through increased industrial involvement in training at the vocational level and through increased emphasis on technical subjects at higher levels of education. This is the experience of the East Asian NICs (Hanival & Hirsch 1998:46).

Developing countries have passively relied on foreign investment to meet their technological needs

(Hanival & Hirsch 1998:46). This does not encourage the 'know-why' attitude necessary for research and development. Some manufacturing industries used inappropriate technologies (Hanival & Hirsch 1998:46). For example, the South African chemical industry used oil-based rather than coal-based technology. The government recognizes the importance of a technology promotion policy driven by export of high value-added manufacturing goods. It established the National System of Innovation (NSI), the Support Programme for Industrial Innovation (SPII) and the Technology and Human Resources for Industry Programme (THRIP) (IDC 1995a:44). The NSI coordinates activities which promote technological innovation. SPII is designed to promote technological development in manufacturing industries through direct financial and project management support of competitive products. THRIP is aimed at providing the manufacturing industry in South Africa with the means to obtain specific responses to its technological needs (IDC 1995a:44). Furthermore, they produce skilled researchers and managers who understand technological development.

6.6.6 Trade policy in the manufacturing sector in South Africa

According to Fourie et al. (1995:497), trade policies are those which affect the structure of incentives of private producers who produce goods and services for domestic or international markets. They include tariff, regional development and those promoting exports. Tariff policy is used to achieve the objectives of industrial policy. Its aim is to encourage domestic manufacturers to be internationally competitive and to penetrate the export markets (IDC 1995a:22). This is done by matching grants for outward selling trade missions and primary export research. The Outward Selling Trade Mission Programme assists South African exporters to penetrate new markets by assisting them to gain access to foreign buyers (Hanival & Hirsch 1998:37). Moreover, the primary export market research provides financial assistance to exporters for costs incurred in developing entirely new export markets for manufactured goods.

A shift in the orientation of trade policy in South Africa is taking place from import substitution to the promotion of competitiveness in an outward looking environment (IDC 1995a:22). The

change in trade policy involves the restructuring of protection, export promotion and relationships with Southern Africa.

South Africa is committed to fulfilling the requirements of the World Trade Organisation (WTO) (IDC 1995a:16). It has to ensure that its policies fall within the framework of what is permitted by the rules of the WTO. According to the RDP as quoted in ANC (1994:87), trade policy has to concentrate, in tandem with industrial policy, on maximizing the quantity of manufactured exports from South Africa. This involves making the country competitive. Furthermore, the RDP has identified the need for measures to assist SMME's in becoming competitive in international markets. This is because of their relative labour intensity (IDC 1995a:16).

6.7 THE MANUFACTURING SECTOR IN THE EASTERN CAPE

The manufacturing industry in the Eastern Cape operates within the broader economy. This sector has strong human development needs (Ministry of Economic Affairs 1995:3). This is because human development is significant in improving the standard of living and in alleviating poverty, which faces the majority of the population in the province. Human potential can be improved by addressing socio-economic conditions such as inadequate education and training, housing shortage, inadequate health services, water and electricity.

Transport, water and electricity are a problem in the Eastern Cape, especially in the rural areas (Ernst & Young et al. 1995:3). Rural residents walk long distances to fetch water and rely on infrequent buses and taxis. Most houses in the province are informal structures (Ministry of Housing and Local Government 1995:13). These issues contribute to the low absorption capacity of labour by the manufacturing industry in the Eastern Cape. In fact, employment in the manufacturing industry of the Eastern Cape had an annual growth rate of 0,3 per cent while GGP grew by 1,7 per cent during the period 1980-1991(Ernst & Young et al. 1995:6).

The Eastern Cape has comparative advantages for manufacturing industry wishing to locate in its

areas (Focarrico & van Wyk 1992:194). This is shown by location coefficients of the various regions. Location coefficients give a good indication of relative advantages in economic activity in the regions of the Province (Focarrico & van Wyk 1992:193). Moreover, they are used as an indicator of possible future development. Regions 1 & 2 in the Eastern Cape have comparative advantages in manufacturing while regions 3, 4 & 5 have comparative advantages in agriculture (Ernst & Young et al. 1995:6).

The Eastern Cape has to consider developing agro-manufacturing industries such as food processing and wool production industries. These industries use direct and indirect inputs from local resources such as the agricultural sector (Focarrico & van Wyk 1992:189). The emphasis is on manufacturing industries. The reason for developing agro-manufacturing industries is explained by the characteristics of the Eastern Cape. According to Focarrico & van Wyk (1992:195), economic development in poor countries has been inhibited because potential agro-manufacturing industries have not been fully utilised. This is the case in South Africa in general and in the Eastern Cape in particular. Given the characteristics of the Eastern Cape manufacturing industries such as linkages and employment opportunities, there is no doubt that agro-manufacturing industries are important for growth in the province.

Economic growth, employment and development in the Eastern Cape can occur if certain issues are addressed (Ernst & Young et al. 1995:18). These include SMME's, SDI's and linkages presently existing in the manufacturing industry. Opportunities exist for further exploratory development in leading manufacturing sub-sectors such as the motor vehicle, food processing and textile and clothing industries. The RDP investment programmes which promote production of school furniture, bricks, tiles and hospital beds can bring local manufacturing opportunities for SMME's (Ministry of Economic Affairs 1995:4). SDI's offer major manufacturing opportunities in the form of employment creation, export-led growth and economic growth (Driver 1998:808).

The promotion of SMMEs is seen as central to the promotion of economic development in rural areas (Ernst & Young et al. 1995:20). One of the objectives of the SMMEs policy is to implement

local service centres (Ministry of Economic Affairs 1995:4). These centres can provide access to basic management and vocational skills training.

The Eastern Cape has many positive factors that can help attract investment. These include an abundant labour supply which is more productive compared to South Africa as a whole (Ministry of Economic Affairs 1995:17). The Province has many tertiary institutions for skills training. The metropolitan area infrastructure is well suited for access to African markets and international trade routes between the Far East and Europe. The Eastern Cape is also politically stable.

The motor vehicle, chemical, petroleum, and pineapple industries need support in order to survive (Ministry of Economic Affairs 1995:18). The motor and chemical industries are subject to strong international competition. They contribute to production of manufacturing exports. The motor vehicle industry in the Eastern Cape contributes 42 per cent of the total motor vehicle production in South Africa (Ministry of Economic Affairs 1995:5). Moreover, the chemical and rubber industry in the Eastern Cape contribute 52 per cent to national output in South Africa. The pineapple industry is extremely valuable to the Eastern Cape (Ministry of Economic Affairs 1995:18). This industry provides employment to unskilled labour in the province.

The food, textile, clothing, leather, footwear and fibre industries offer many new opportunities (Ministry of Economic Affairs 1995:19). Furthermore, this province produces 90 per cent of mohair output. The textile and clothing, leather and footwear industries contributed 11 per cent and 20 per cent respectively to national output during 1994 (Ministry of Economic Affairs 1995:20).

6.7.1 The socio-economic profile in the manufacturing sector in the Eastern Cape

The increase in the economically active component of the Eastern Cape population increases the need for job creation (Ministry of Housing & Local Government 1995:6). The high growth in the Eastern Cape population increases the need for additional infrastructure such as education, training

and health facilities. These are essential in the support of sustainable economic growth.

Declining employment in the formal sector of the South African economy led to the return of many migrants to the Eastern Cape (Ministry of Housing & Local Government 1995:9). This, in turn, led to the need for an enabling environment in the informal sector. The high literacy rate of the potential labour force compared to South Africa as a whole, provides a potential advantage for manufacturing industry in the Eastern Cape.

The metropolitan areas of Port Elizabeth and East London are based on manufacturing. The manufacturing industry has recovered from the withdrawal of the motor industry. The community services sector contributes more to GGP and employment of the Eastern Cape than South Africa as a whole. According to the Ministry of Housing & Local Government (1995:11), the development and extension of manufacturing as the leading sector in the metropole is significant for continued overall development because of the poor primary resource base of the Eastern Cape.

6.7.2 Infrastructure in the manufacturing sector in the Eastern Cape

The physical infrastructure in the Eastern Cape needs upgrading, development and maintenance (Ministry of Housing & Local Government 1995:18). This has to be done in order to attract manufacturing investment and to encourage growth. Moreover, infrastructure has to provide services that respond to effective demand. According to the Ministry of Housing & Local Government (1995:20), investment in infrastructural stocks in developing countries has not generated the services required. This resulted in a waste of resources.

The metropolitan areas in the Eastern Cape are adequately supplied with infrastructural services such as water, electricity and roads (Ministry of Housing & Local Government 1995:18). The sub-regions of the province have an uneven water supply. It is essential that provision is made for maintenance of water capacities because of variable rainfall patterns. The road system in the Eastern Cape is poor and needs better maintenance. It is receiving priority in the provincial

government (Herald 1998:1).

6.8 SUMMARY AND CONCLUSIONS

Empirical evidence shows that the manufacturing industry is the driving force of economic growth and development in the Eastern Cape. This view is confirmed by manufacturing theories, the experiences of developed countries and the history of manufacturing in South Africa. The direction and methods of manufacturing development have to change.

The overriding objective of all government policies is to achieve sustainable growth and development. This ensures a better life for all people. A significantly increased and improved distribution of economic activity in the country reflected in output and employment growth is required to meet these objectives. The manufacturing industry in South Africa and in the Eastern Cape has to provide the economic power which lays the foundation for sustainable employment creation. This is mainly because of drastic employment decline in mining and agricultural industries.

The manufacturing industry in South Africa and the Eastern Cape needs to be revitalized. An active industrial strategy is required to enhance the effectiveness of the economy. This can be achieved by intergrating human resource development, technological enhancement, industrial and labour market policies. Future policy formulation has to make provision for the participation of the state, labour, business and other interest groups. These pillars are entrenched in the RDP which provides the yardstick against which policy is to be evaluated.

Human resources development is important in creating an enabling environment in which employment growth and viable labour-intensive industrial development can be achieved. It is further important in the development and optimal use of technological capacity. This is done through programmes such as Technology and Human Resources for Industry Programme. Productivity is expected to follow from human resources development initiatives.

The economy of South Africa and the Eastern Cape is relatively unbalanced. It relies heavily on manufacturing in the metropolitan areas such as Port Elizabeth/Uitenhage and East London in the Eastern Cape. The predominant sectors in the province include motor vehicles, food processing, wool and leather products, tobacco and textiles. Agro-manufacturing industries such as food processing and leather are the largest employers. The manufacturing industry has linkages with other sectors. For example, the food processing industry use food supplied by the agriculture sector.

The objective of trade reform is to restructure industry so as to increase its long-term international competitiveness. This requires industrial support measures in order to assist regional industries to improve their international competitiveness. This has to be done in order to create more employment opportunities, growth and development.

The Eastern Cape has been dominated by the expansion of the government sector. This sector, however, merely contributed to an increase in employment. It did not contribute to increased growth and investment or to improved development of the people. Furthermore, it has no strong linkages with other sectors. The manufacturing industry has the ability to create employment, attract investment, improve human capital and linkages with other sectors. Therefore, this industry can contribute to the growth of the province.

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