AN EVALUATION OF THE NELSON MANDELA METROPOLE AS A LOCATION TO ATTRACT INVESTMENT

THESIS

submitted in fulfilment of the requirements of the degree of

MASTER OF COMMERCE

at Rhodes University

by

PHILILE ZIPHO NONXUBA

Supervisor

Professor H. Nel

January 2006

DECLARATION

Except for the references specifically indicated in the text and such help as I have acknowledged, this is wholly my own work and has not been submitted for degree purposes at any other university.

Philile Zipho Nonxuba

Grahamstown
January 2006

ACKNOWLEDGEMENTS

I would like to express sincere thanks to my supervisor, Professor Hugo Nel for his time in providing me with helpful comments on this thesis, his guidance and friendly advice, as well as his interest in providing me with additional reference material.

My gratitude also goes to my daughter, HLOMBE, for her unselfish commitment in helping me with the type setting of this thesis, as well as the enormous sacrifice she made in terms of time. (Nangamso MA-LETA).

My family, wife and children, also deserve my sincere gratitude for the patience they have shown in allowing me to use the precious family time in organising this thesis.

DEDICATION

This thesis is dedicated to my late parents, Vivian Sidima Nonxuba (1912-1989) and Maria Zingiswa Nonxuba (1914-1995).

They provided me with a spirit of self-development through their wonderful motivational skills and a strong support system they developed within the family.

Rest in Peace.

ABSTRACT

The Nelson Mandela Metropole is the largest contributor to the Eastern Cape Province's economy and its share of the production of the Eastern Cape is about 41, 3 % per annum. This requires that the competitiveness of the Metropole be improved in order to enable it to meet the challenges of the Province. The objective of the GEAR policy strategy places a focus on the leading coastal industrial locations of South Africa. Furthermore, the national government has shifted the responsibility of service delivery to local governments in an effort to reinforce the integrated development planning process in municipalities. To meet those challenges, the Metropole has focused its attention on improving local resources.

To enhance the performance of the manufacturing industry of the Metropole, it is necessary to ensure that the Metropole has locational attributes to attract new investment. Such attributes include creation of closely located industries. This will help the firms to engage in competition as well as engage in co-operative activities among themselves.

The study employs a variety of theories to highlight the need to enhance productivity of industries in order to attract new investment. These theories include the new (endogenous) growth theory that argues that productivity growth is determined by introduction of new technologies. Such technologies accrue because ideas that contribute to their development are nonrival, and thus their creation has a fixed cost and zero marginal cost. The property of fixed cost in the creation of ideas results in the emergence of increasing returns to scale.

The Porter's Diamond framework is used in the study to take the issue of productivity growth further. Its thrust is that in particular nations some industries experience high productivity growth rates. It further argues that the locational attributes are responsible for these industries in registering high productivity growth levels. These attributes include the creation of advanced resources such as a skilled labour force.

The data obtained from the survey of the research on the manufacturing industries forms part of this study. The findings of the survey reveal that although the manufacturing sector of the South African region has registered some significant success, there is still some room for improving its

competitiveness. It revealed that development of the local markets through competition and co-operation among the industries would help to render these industries internationally competitive.

This study concludes with some recommendations. These recommendations place emphasis on improvement of infrastructure, quality of labour force, and development of the region's market. In order to carry out the recommendations effectively, government policy has to be repositioned so as to enhance its visibility among the stakeholders in the economy. Of importance is to ensure the promotion of policy that supports geographically concentrated businesses.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

1.1 BACKGROUND

The ongoing process of globalisation since the latter part of the 20th century has brought about a renewed interest in the importance of the economic role of cities (Pakes and Nel, 1997:5). The big cities in South Africa account for about 80% of the country's gross domestic product (GDP). Thus, the economic performance of these regions is critical in terms of national economic development.

The Nelson Mandela Metropole (NMM), consisting of Port Elizabeth and the surrounding areas of Uitenhage and Despatch, is one of the six metropolitan areas in South Africa. Levin, Erasmus and Lloyd (1992:2) argue that it has great potential for economic growth, and yet high levels of unemployment are being experienced. Mullins (1994:12), for example, estimates that 32.8% of the economically active population in the Metropole was unemployed in 1993. The estimation of the unemployment rate in the Port Elizabeth region by the Development Bank of South Africa was 39.8% in 1994 (Black and Saxby, 1996:18). According to the 2001 census, the Metropole's unemployment rate was estimated at 31.8% (Stats SA, 2003).

In June 1996, the government launched the Growth, Employment and Redistribution Strategy (GEAR). GEAR aimed to transform South Africa into an economy able to compete internationally, and at the same time to achieve a higher rate of economic growth and a significant increase in employment. This policy has created a renewed focus on the main coastal industrial locations of South Africa, namely Cape Town, Port Elizabeth, East London and Durban.

Clark and Layard (1989:53) state that the first principle in combating unemployment is to create jobs specifically for the kind of people who are unemployed. Economic growth is expected to improve the employment rate, and thus an employment policy must be located within the

framework of economic growth (Roux, 1991:107). The Presidential Commission (1996:22) has identified two levers of a growth strategy which help in creating jobs: investment and economic stability. Economic stability requires that the policy commitments of the government be credible. For example, they must not be subjected to unexpected changes. Investment is expected to occur when there is a demonstrated need for new productive capacity (Presidential Commission, 1996:25).

The quest for economic growth has resulted in many theories on the role of investment, competitiveness, availability of resources, and skills, though only a few have been developed.

The questions of infrastructure, government support, firm strategy and customer demand are also among the important elements for economic growth and the location of industries. Xavier (1994:15) argues that transnational corporations take into consideration market size and the existence of infrastructure in their decision-making for investment purposes. He further states that suitable factors of production, supportive government incentives and managerial expertise enhance the chances of attracting direct foreign investment.

1.2 PROBLEM STATEMENT

As stated above, the NMM is the largest contributor to economic activity in the Eastern Cape, yet it suffers from unacceptably high unemployment.

Furthermore, the Metropole forms the backbone of the economy of the Eastern Cape with its manufacturing sector, contributing 50.2% of the province's manufacturing output, and its services contributing 38.3% of the province's community services output (ECSECC, 2005:22). The Metropole therefore has the potential to become a competitive region, but seemingly does not fulfil its economic potential.

Given the above position of the NMM in the Eastern Cape Province and also the role it is already playing in terms of creating jobs and economic stability in the region, it is important to investigate whether it has the competitive advantage to attract investment.

1.3 GOALS OF THE RESEARCH

The main goal of the study is to analyse the present economic profile of the NMM and to explore its position as a centre to attract further investment.

Specific sub-goals are as follows:

- To examine the theoretical underpinnings of economic growth and investment location which would be relevant in analysing the economy of the NMM.
- To evaluate the NMM's economic attributes for competitiveness, according to Porter's theory.
- To compare the NMM with other similar industrial regions in South Africa regarding its attractiveness to investors.
- To make recommendations for further manufacturing growth in the area.

1.4 METHODS AND PROCEDURES OF RESEARCH

A literature survey has been conducted in order to lay the theoretical foundation of the study. Existing research reports on the region have also been consulted.

Regional economic data available from secondary sources has been used in order to conduct a comparative statistical analysis of selected indicators relevant to the study. Other relevant information has been consulted, such as government publications, reports and journal articles. The NMM has supplied some documentation which gives economic information about the region. More data has been obtained from organisations such as the Port Elizabeth Chamber of Commerce and Industry and the Coega Development Corporation.

A questionnaire has been used to obtain information from a selected list of stakeholders and role-players in the private and government sectors, organised trade and industry, development agencies and academic institutions.

Information has also been obtained through liaison with development groups in the region, such as the Port Elizabeth Development Forum.

1.5 OUTLINE OF THE THESIS

This thesis is divided into six chapters. Chapter 2 provides an outline of the theory of economic growth, which highlights the relevance of investment, in particular, in the growth process.

Chapter 3 gives an outline of investment location theory.

Chapter 4 provides an economic overview of the Nelson Mandela Metropole. This has been done by analysing economic indicators of the region, using the data available from private, academic and government sources.

Chapter 5 explores whether the various economic sectors have an impact on the economy of the NMM. This analysis is based on the quantitative data obtained from the survey of the economic manufacturing sectors of the region, as well as the qualitative information secured from interviewing the stakeholders and role-players in the region's economy. The findings of the survey are interpreted by using Porter's "Diamond" framework. Finally, recommendations are offered for improvement of the Metropole's economy.

Chapter 6 draws conclusions on the arguments of economic growth and location theories. It also offers recommendations on overall improvement to the Metropole's economy, based on the findings of the questionnaire survey in order to achieve competitive advantage.

CHAPTER 2

THE THEORY, POLICY AND SOME EMPIRICAL EVIDENCE OF ECONOMIC GROWTH

2.1 INTRODUCTION

This study deals with the economic profile and potential growth of the Nelson Mandela Metropole. Therefore, it is important to first examine the theories underlying the process of economic growth. This provides a measure which can be used to assess the region's progress in economic development, and the potential it has for further economic development.

Sections 2.2 to 2.5 discuss the main economic growth theories and their contribution to the role that saving and investment play in economic development. This provides a macro-context for analysing the NMM in Chapter 5. Section 2.6 considers the theory of the role of government in economic growth. This theory focuses on the principles which guide the economic policy of a country in order to encourage growth of existing industries and establishment of new ones. Section 2.7 provides evidence of successful technological improvements across Asian economies. These experiences offer a challenge to developing economies, as they show the importance which the countries attach to the transfer of technology for the development of their technological capabilities.

2.2 THEORIES ON ECONOMIC GROWTH

This section and the subsequent ones examine some of the established theories on economic growth. These theories have existed for many years and provide a basis for the understanding of the role that saving and the investment play in the industrial development of economies. The examination of the growth theories begins with the classical theorists. This is followed by examination of the Keynesian growth theory as represented by the Harrod-Domar growth model, the neoclassical model, and finally the new growth theory.

2.2.1 Adam Smith

The issues of economic growth and the distribution of output between wages and profit were at the heart of the growth process as described by the classical economists such as Adam Smith, Thomas Malthus, David Ricardo and Karl Marx.

Smith's greatest contribution to the theory of output growth was the introduction of the concept of increasing returns to scale. This is a situation in which output increases more than in proportion to production factors as the scale of production in a company increases (Lipsey *et al.*, 1999:191). According to Smith (1776:37), the realisation of increasing returns to scale depends on the degree of the division of labour. This is the act of different units of labour performing different tasks in the process of producing a product. This view formed the basis of Smith's optimism concerning economic growth as a sustainable process in the long run.

The importance of increasing returns to scale is central to Smith's model. The model is designed to show that the growth of output depends on investment and capital growth. Investment is determined by saving that is generated by profits accruing from industry and agriculture. Thirlwall (2003:127) argues that the model stresses the importance of labour productivity growth in ensuring the generation of profits from industry and agriculture. Furthermore, the division of labour is the main determinant of the rate of labour productivity. The essence of Smith's model emphasises that the principle of the division of labour determines the level of labour productivity. Owing to the division of labour, one worker becomes capable of doing an amount of work that would otherwise be done by many workers. Thus, the same numbers of workers are capable of contributing to a great increase in the quantity of output (Thirlwall, 2003:128).

The division of labour provides an opportunity for the production process to be broken into simpler processes. Smith (1776:39) notes that the division of labour allows so-called "learning by doing" to increase the skills of each worker through experience. The system encourages the saving of time that would otherwise be spent when a worker moves from one task to another. Moreover, this approach to production creates a scope for capital accumulation by facilitating the breaking up of difficult production processes into simpler ones that allow for the utilisation of machinery. These conditions are the sources of improved labour productivity.

As an example, suppose labour productivity is increasing by 3% per year. Thus more output is produced while using the existing workers. If labour is measured according to efficiency units, the effective labour will be growing at 3% per annum. The principle of constant returns to scale means that the economic growth rate per year will be 3%. But, since the number of workers remains the same, the output per person increases over time. Thus, the economy experiences a long-run growth owing to increasing returns to scale (Thirlwall, 2003:129).

However, the ability of the principle of the division of labour to create increasing returns to scale depends on the size and nature of the market. According to Smith (1776:41), a small market for the products will lead to surplus production. It would be futile for anyone to focus on a task to produce a product for which there is a small demand.

Demand conditions for goods and services shape the rate of improvement in output productivity. According to Porter (1998:149), firms become competitive in industries where they enjoy economies of scale because they have a large market size. This encourages companies to invest in large-scale ventures and technology improvements. Large-scale investment need not focus only on home demand. For example, the world-class Swiss industries bear testimony of the ability of international firms which achieve scale from different foreign markets. It is on this basis that Smith (1776:43) argued that the size of the market could be restricted by limitations on trade. Thus, he encouraged the concept of free trade domestically and abroad.

The concept of increasing returns to scale in Smith's model has a profound importance for the manner in which the economic growth process is viewed by modern growth theories. The neoclassical theories assume that investment is subject to the principle of diminishing returns to scale. This means that the productivity of a variable factor of production falls as all other factor inputs are held constant. For example, where output is produced using two factors, capital and labour, the addition of more capital to a fixed labour amount leads to the extra unit of capital, producing less output than the preceding extra unit of capital. The question of diminishing capital productivity occurs both when the labour force is constant and when its quality is not improving (Romer, 1993:86).

On the other hand, the notion of increasing returns to scale means rising capital productivity as labour remains constant. Smith (1776:44) ascribed capital's productivity improvement to improved labour skills owing to the division of labour. Increasing returns to scale are experienced mostly in industry, while diminishing returns to scale are a character of activities as agriculture, which is land-based, and land is a fixed production factor. As mentioned earlier in this section, it is easy in industry to separate one business from another, while in agriculture it is difficult to divide labour into sub-units.

Smith's model is designed to show that growth is driven by capital accumulation, which is made possible by investment of profits accruing from industry. According to Thirlwall (2003:130), the rate of profit may rise or fall. With increasing productivity, the rate of profit rises. This is because of new opportunities for investments as the division of labour results in improved quality of labour and new technology is developed. Thus when new opportunities for investment arise, the rate of return on investment improves. On the other hand, the growth of the economy's capital stock triggers competition among capital owners. The market for capital becomes depressed and the rate of return falls. This will tend to shift the economy towards the so-called "steady state". At this point, output per person and capital per person grow at a constant rate. According to Smith (1776:45), this situation can take a long time to materialise. He believed that in the interim new technology might be developed and new investment opportunities arise. Smith's optimistic growth model contrasts sharply with those of other classical economists such as Malthus, Ricardo and Marx, in which the fall of rate of profits and the occurrence of the so-called "steady state" in the economy is inevitable.

2.2.2 Thomas Malthus

Malthus viewed the process of economic growth pessimistically. His model is based on two strands: the importance of "effective demand" as a pillar on which to sustain growth, and the problems of rapid population growth.

While Malthus stressed the significance of the idea of "effective demand", all other classical economists emphasised *Say's Law*, that supply determines its own demand. *Say's Law* implies that only factor inputs determine the growth of output. Malthus (1798:51) argued that the

demand for goods and services accounts for part of the growth process in addition to the supply of factor inputs. This demand comes from consumption and investment. In other words, per-capita output is divided between consumption per worker and investment per worker. The investment component comes from the saved output.

The demand for goods and services in Malthus's model is a function of output less saving. According to Mankiw (2003:81), saving determines the rate of capital growth. Saving is invested in financing new capital both for workers who enter the job market for the first time and for replacing worn-out machinery and equipment. As factor inputs increase through growth in capital and the labour force, part of output is saved in order to be invested in new capital. Malthus (1798:52) declared that demand must grow as the productive capacity of the economy grows. This declaration implies that a reduced demand for output will lead to less saving than in the previous period. This is due to the fact that output is always equal to consumption and saving. Lower saving constitutes less investment opportunities in capital growth, and output growth falls.

The second strand of Malthus's growth model concerns the problem of rapid population growth. Thirlwall (2003:132) notes that Malthus claimed that the population has a tendency to increase and double itself every 25 years. In contrast, the growth rate of food production is less than that of population growth. The production of food grows less than population owing to diminishing returns to scale. The presence of diminishing returns to scale characterises land-based activities such as agriculture.

The result of the variance between population growth and growth in food supplies will lead to per-capita income being reduced. Thirlwall (2003:316) claims that low per-capita incomes do not provide the saving required to create desired capital growth that makes long-run output growth possible.

The question of improved methods of production is considered in this model. Malthus (1798:58) emphasised that the possibility of extra per-capita incomes due to new technologies might bring about temporary growth of output. He claimed that technological progress might lead to fewer

deaths and more growth in population. Thus, technical improvement would be a double-edged sword. The increased population would suppress that temporary increase in output.

Malthus's theory of population had a tremendous intellectual impact on theories of economic growth. However, it is no longer regarded as a suitable description of current patterns in modelling economic growth. This is because new technology has provided positive preventative means to curb more births and because food has grown faster than population growth.

2.2.3 David Ricardo

Ricardo's point of departure was the effect of diminishing returns to scale in agriculture that would cause the growth process to reach a so-called "stationary state" (growth constant, only output level increases).

Ricardo's growth model, as explained in Thirlwall (2003:133), states that the growth process is determined by capital accumulation, which, in turn, depends on saving and investment generated from profits in agriculture and industry. The rate of profit is determined from the residue from total output less rent and wages. The shortage of food due to diminishing returns to agriculture causes wages to increase and the rate of profit to fall.

The equilibrium of the economy is achieved when profits in agriculture equal the profits in industry. When profits in agriculture fall due to food shortage, capital is transferred to industry. The surplus capital in industry causes the rate of profit in industry to fall. Ricardo (1817:73) subscribed to the *Say's Law* and saw no capital constraints in the economic growth process because supply would determine its own demand. The culprit in the growth of output was wages. Thirlwall (2003:134) emphasises that Ricardo was convinced that the abundance of capital would not result in low profits as long as the rise in wages did not materialise.

Ricardo was opposed to policies that would impose restrictions on imports, including food. He believed that the scarcity of food would lead to high prices and increased wages as the demand for labour rose in response to attempts to raise food production. According to Ricardo (1817:76), importation of food from abroad would ease the burden of meeting food demand for internal

production. Overcoming the scarcity of food would deter rising wages and falling profits. He maintained that without dropping profits, capital growth would be achieved. On this basis, it was difficult for him to envisage a point where output growth would reach steady state.

The question that must be answered is how to keep wages low. Governments in the developing economies make attempts to keep agricultural prices low in order to keep wages low while enough food is produced. However, this serves as a disincentive to farmers and leads to reduced food production. Furthermore, low prices in agriculture reduce the potential of the agricultural sectors to serve as a market for industry. Determining the equilibrium between the agricultural and the industrial sectors and yet maintaining optimal output levels remains a problem for development strategists.

2.2.4 Karl Marx

Marx's model is designed to show that a decline in economic growth is associated with overproduction, coupled with friction between workers and employers. Growth is determined by the accumulation of capital, which, in turn, comes from profits. The surplus value is the difference between the minimum wage per worker and the output per worker. The profit rate is a ratio of surplus value to total capital. The growth of capital depends on the techniques of production. As they become more capital-intensive, total capital increases. The consequence will be a fall in the profit rate, except where surplus value increases. Thirlwall (2003:134) suggests that an increase in wages reduces surplus value. This will not happen as long as surplus labour exists that helps to keep the level of wages down. However, an increase in the accumulation of capital will absorb the surplus labour. This has the implication that wages will rise and profits decline. Conflict between workers and employers is precipitated by the capitalists' attempt to keep wages down, even though there is growth in the accumulation of capital.

A lack of adequate demand also leads to a fall in profits. Capital-intensive production techniques render a portion of the labour force redundant. Therefore the consumption of produced goods declines. In this sense, growth in the accumulation of capital brings undesired results and capitalists lose the incentive to invest (Thirlwall, 2003:135).

Marx's predictions have not materialised. The model does not consider the role of technological improvement. For example, new technology contributes to higher levels of productivity. Therefore the rise in wages is offset by rising productivity as the same quantity of inputs produces extra output.

2.2.5 Critique of classical economists

Most of the classical growth theories were pessimistic about the potential of economies to achieve sustainable economic growth. For Ricardo, economic growth was limited by the effects of diminishing returns to scale because of the limited availability of land. According to Nafziger (1997:87), Ricardo's argument did not include the role of technological progress in economic growth. In Ricardo's model, like Smith's, capital accumulation is the determinant of economic growth. But for Ricardo, diminishing returns from rapid population growth and a fixed quantity of land would discourage economic growth. Meade (1963:77) points out that because Ricardo believed technical improvement could temporarily offset the effect of diminishing returns to scale, capital accumulation was regarded as the only means of offsetting diminishing returns in the long run.

It is interesting to note that Ricardo's model emerged in the midst of numerous scientific discoveries and technical improvements that contributed to increased output. Nafziger (1997:88) argues that Ricardo underestimated the impact of technical progress in bringing about sustainable growth. Some contemporary economists including Meade (1963), have added technological advancement to their growth models while still adhering to the classical premises.

Ricardo (1817:89) advocated that profits would decline if landlords increased rents, because of reduced land availability caused by rapid population growth. The increase in total wages would cause profits to fall. This would be due to population growth. Nafziger (1997:89) is of the opinion that in this premise the classical theory ignored the possibility of curbing population growth by means of voluntary birth control. Furthermore, the private ownership of production factors, such as land, is not an economic precondition. If land is state owned, the problem of rent can be offset.

Marx (1867:51) suggested some reasons for the conflict between workers and capitalists. He ignored the possibility that because of their similar interests, workers and employers co-operate with one another. Nafziger (1997:90) suggests that workers might have supported capitalists if they realised how much they gained from the system. Marx's point was based on the behaviour of discontented workers. The point is that there is a possibility for capitalists to appease the working class by offering incentives for their efforts.

His work reflects confusion between money and real wages. An increase in money wages because of a decline in surplus labour is not necessarily followed by an increase in real wages. But there can be a trade-off between a rise in real wages and an improvement in productivity, so that the profits remain the same. Furthermore, the theory ignores the rate of technological progress. If technology improves, the growth in productivity will also improve. The next section marks the beginning of a discussion on modern growth theories, in which technical change enhances labour productivity. If this exceeds wage growth rate, then the profits remain unchanged.

2.3 HARROD-DOMAR GROWTH MODEL

The Harrod-Domar model, an offspring of Keynesian economics, models growth as the outcome of the equilibrium between saving and investment.

Harrod's concern in designing the growth model was to establish the rate of growth of income that would induce equilibrium between saving and investment. Furthermore, if this equilibrium is disturbed, will it be self-correcting or not? According to Nafziger (1997: 123), the fundamental variables in the Harrod-Domar growth model include capital accumulation and the ratio of increase in output to increase in investment, $\Delta K/\Delta Y$, since $\Delta K = I$ by definition. ΔK is a change in capital, ΔY is a change in output, and I is investment. The change in capital stock, ΔK, is due to investment = I. Thus, $\Delta K = I$. The change in output, ΔY, is a result of a change in the capital stocks, ΔK.

In designing the original Harrod-Domar growth model, Harrod (1939:79) distinguished between three different growth rates: the actual growth rate (g), the warranted growth rate (g_w) and the natural growth rate (g_n). The actual growth rate is shown as:

$$g = s/c. \qquad (2.1)$$

where s is the ratio of saving out of income and c is the ratio of change in capital, ΔK, to the change in output, ΔY, $\Delta K/\Delta Y$. It is important to note that equation *(2.1)* shows the equality between saving (S) and investment (I). Substituting the expressions for s and c into equation *(2.1),* this gives $s/c = S/Y / (I)/\Delta Y = \Delta Y/Y$, which denotes output growth, when $S = I$ and $\Delta Y/Y$ indicates the growth of output.

The model seeks to establish whether or not the actual growth rate will create a situation in which desired investment equals desired saving. This is where the notions of the warranted growth rate and the natural growth rate play a role. According to Harrod (1939: 80), the warranted growth rate provides a basis for the economic agents to be satisfied with the level of investment. In other words, it is the growth rate that encourages investment in order to have investment and saving in equilibrium and the capital stock fully utilised. Therefore, entrepreneurs are willing to continue investing at the same rate as previously. At the warranted output growth rate, desired expenditure equals output, that is, $g = g_w$. As long as investment equals saving, the economy continues to grow.

When the desired level of saving does not equal desired investment, that is $g \neq g_w$, the output growth rate is affected in the sense that there is either a recessionary or an inflationary gap. Harrod (1939: 81) analyses both scenarios, that is, when $g > g_w$ and $g < g_w$. In a case of the actual growth rate being greater than the warranted growth rate, that is $\Delta K/\Delta Y > I/\Delta Y$, investment is not enough to maintain a constant capital stock growth. As a result, an inflationary gap opens and there is more demand for factor inputs. With increased investment, actual output increases further and the inflationary gap widens. A situation in which $g < g_w$, that is, $\Delta K/\Delta Y < I/\Delta Y$, desired investment exceeds the current capital stock growth rate. Resources become idle, and investment is discouraged with the recessionary gap opening further. The gap widens. The

significance of this disequilibrium is that it will be self-aggravating. This is because when $g > g_w$, that is, $\Delta K/\Delta Y > I/\Delta Y$, there will be an incentive to invest, while when $g < g_w$, there will be a disincentive to invest.

Domar (1947:81), working independently of Harrod, agreed with Harrod's conclusion that a departure of the economy from the equilibrium was self-aggravating. He emphasised that investment, while contributing to aggregate demand via the multiplier, also increases supply through its effect on expanding productive capacity. His greatest concern was to establish the rate of investment that provides a basis for supply to equal demand at the potential income level. This equilibrium requires that $\Delta Y_d = \Delta Ys$, where ΔY_d is equal to $\Delta I/s$. Thus, a change in the level of investment, ΔI, causes a change in the level of demand by

$$\Delta Y_d = \Delta I/s \qquad (2.2)$$

and also causes a change in the level of supply by

$$\Delta Ys = I\partial \qquad (2.3)$$

where ∂ is capital stock productivity. Thus the investment growth rate $\Delta I/I$ must equal investment and capital stock productivity for a full equilibrium to exist.

The Domar analysis of growth was not to guarantee full employment of labour, even if there was full utilisation of capital stock. This is where Harrod's natural growth rate comes in. Its components include labour, L, and labour productivity, Y/L, and is represented by

$$Y = L\ (Y/L) \qquad (2.4)$$

where Y is income, L is the labour force, and Y/L is labour productivity. According to Thirlwall (2003: 140), the actual growth rate cannot exceed the natural growth rate, that is, when all the active labour force is employed. What is crucial to be established for an economy in the long run is the relationship between g_w and g_n, that is, the relation of capital growth and the labour force

growth. The full employment of labour requires that $g = g_n$, then full employment of both labour and capital requires that $g = g_w = g_n$.

Suppose that the warranted growth rate is not equal to the natural growth rate. When $g_w > g_n$, that is, $I/\Delta Y > L\ (Y/L)$, there is excess capital and a disincentive to invest, because the actual growth rate, which can never be larger than the natural rate, will not be adequate to stimulate investment. When $g_n > g_w$, there will be more demand for capital accumulation. Inflationary tendencies will result, as the actual growth will stimulate investment to match saving. This will be accompanied by labour unemployment because of inadequate capital growth in relation to effective labour. The situation persists if there is no introduction of new technologies.

The Harrod-Domar growth model is significant for understanding the development problems in less-developed countries. For example, there is an active debate in these countries concerning the choice of production techniques (Thirlwall, 2003:141). It is argued that developing countries can shift towards the use of more labour-intensive production methods without compromising output levels. This has the effect of altering the capital-labour ratio.

The failure of the Harrod-Domar growth model concerning the possibility of achieving steady growth at its potential level was the reason for the introduction of growth models that allowed for substitution between economic variables, such as the neoclassical growth model. This follows in the next section.

2.4 THE NEOCLASSICAL GROWTH THEORY

The basic neoclassical growth model was originally developed by Robert Solow and Trevor Swan in 1956. It is renowned particularly for its use of the production function. The model assumes that, first, the labour force growth is constant; second, all saving is invested, that is, saving (S), investment (I) and the propensity to save (sY), are all equal; and, third, output, Y, is determined by the interaction of capital and labour, that is, $Y = F\ (K, L)$. The production function $Y = F\ (K, L)$ exhibits constant returns to scale and diminishing returns to the variable factor, in the event of other factors being held constant (Mankiw, 2003: 83).

The neoclassical growth model assumes that technological progress is exogenously determined and its level is the same across countries. This assumption involves an implication that the economy will reach a steady-state level of growth. According to Dornbusch *et al.* (1999:49), at the steady-state (see below), the per-capita output is constant.

A popular way of showing the growth process in an economy is through the use of the production function in per-capita terms:

$$y = f(k) \qquad (2.5)$$

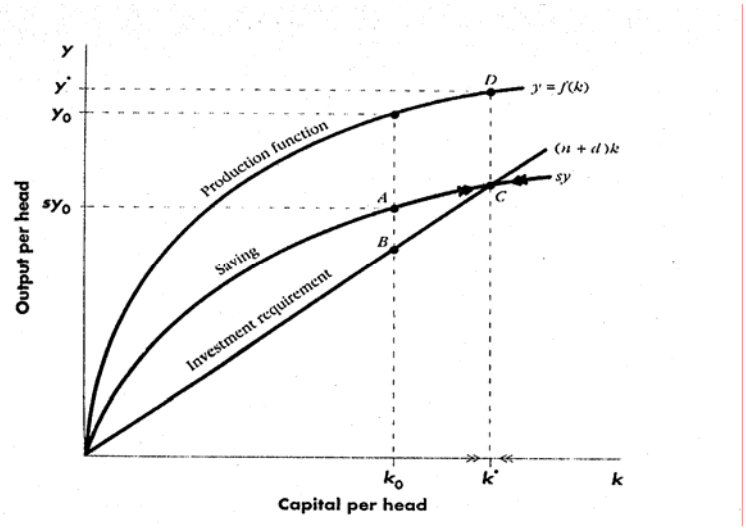
where *(y)* is per-capita output which is a function *(f)* of *(k)*, the capital per person. The process of growth is illustrated in Figure 2.1 that shows the relationship between a change in per-capita capital and output per worker. Dornbusch *et al.* (1999:50) notes that an increase in per-capita capital induces a rise in output per worker. However, increases in capital causes a bigger rise in output in earlier stages of the growth process than in later stages. This is because output has diminishing returns to capital. In other words, each unit of capital contributes less output as the process continues. This is the key issue in explaining why the neoclassical model assumes that the economy will reach a steady state in the long run.

An economy reaches a steady state when per-capita output and per-capita capital assume constant values that are denoted by y^* and k^* in figure 2.1. At the level of these values, Dornbusch *et al.* (1999:50) claims that the investment requirement $(n+d)k$ is just sufficient to finance both capital for new workers and the replacement of the worn-out capital stock, whereas when saving, sy, exceeds the investment requirement $(n+d)k$, there is a rise in per-capita capital that induces a growth in output per worker. When the saving rate is less than the investment requirement, capital and output per worker reduce. Thus the steady-state level of growth occurs when capital per worker and the investment requirement are in equilibrium.

Figure 2.1 enables the examination of the growth process from an arbitrary level to the steady state. For instance, it can be shown how growth in capital per worker from the arbitrary point traces the growth path over time to the steady state. Consideration must be taken that the investment required to provide any value of capital per worker is determined by both the depreciation rate on capital and population growth. The model specifies the depreciation rate as *d*

and population growth as *n*. According to Mankiw (2003:81), both these variables are constants. Population is analogous to labour force growth. Thus, the supply of capital to new workers is shown by *nk* and the replacement of worn-out capital is represented by *dk*. The investment requirement to provide capital to new workers and replace old machines is *(n+d)k*.

Figure 2.1: Steady-State Output and Investment



Source: Dornbusch *et al.* (1999: 51).

In showing the changes in capital per worker, Δ*k*, the model first assumes that saving *sy* is constant and a function of output per person *sy = f(k)*. The change in capital per worker Δ*k = sy – (n+d)k*.

The new growth path of the neoclassical model can be traced from any point when the investment requirement is less than the saving rate *sy*. At this level, capital per person is growing, and output per person is also rising. The growth of the economy comes to a steady state at point *C* in Figure 2.1. Here both output per worker and capital per worker grow at constant rates because the investment requirement is just sufficient to keep capital per worker constant. At the steady state, the saving rate has no effect on growth. However, aggregate output level is increasing (Dornbusch *et al.*, 1999:52).

2.4.1 Critique of the neoclassical growth model

The neoclassical growth model has several weaknesses that include the assumptions of perfect competitive markets. The inclusion of the assumption was necessary to ensure that all resources were optimally allocated (Nattrass, 1997:21). Lydall (1998:13) stresses that under this assumption equilibrium will be achieved, ensuring maximum allocation of resources by markets themselves. Pack and Westphal (1986:119) argue that neoclassical theorists believe that markets do not fail to clear. Thus, only minimal government intervention is necessary. Streeten (1993:1289) shows that in real-world situations, markets have to be regulated. In the real world, some groups have power over some markets.

The assumption of perfect competition can be linked to another assumption of the model, such as perfect information. Nattrass (1997:21) argues that this assumption is supposed to highlight the presence of stable expectations in the market. When markets fail to clear, uncertainty emerges. Information becomes imperfect, and instability in expectations occurs. This causes instability in the market as investment plans are put on hold or scaled down. Pack and Westphal (1986:121) contend that the effects of change in investment plans impact negatively on economic growth.

Another assumption of the Solow model is that technology is exogenously determined, and its level of availability is the same throughout the world. According to Stonier and Hague (1975:621), the technology of this model is tradable in a perfectly competitive market where it is freely available. Solow brings in technological change when the growth process reaches a steady state. This type of technical process is assumed to be neutral. It is not responsive to any forces in the model. It is thus impossible to discuss the extent of technological change in the model.

The Cobb-Douglas production function is commonly used in the model to distinguish empirically between the sources of growth. For example, Solow (1957:430) analysed United States (US) data for the period 1909-1949. He established that technical change was responsible for 1.49% of the average annual growth of 2.9% of total GDP. The results help to prove that technological progress was the main driver of long-run economic growth, as claimed in the theory. However, the assumption that technical progress is neutral, creates a problem as far as explaining the driver of technological change is concerned. The neoclassical theorists claim that government intervention in the economy is necessary on a small scale. It is required for example

to maintain law and order. This claim is questionable in the face of the fact that the Cobb-Douglas production function does not model the real world. Research has revealed that market forces are not entirely responsible for technical progress (Pack and Westphal, 1986:87).

Furthermore, the neoclassical theorists claim that poor countries should grow faster than rich countries. This should lead to the convergence of per-capita incomes across economies. The basis of this claim is that poor countries with a low capital-labour ratio will exhibit higher productivity of capital. This means that the ratio of investment to gross domestic product (GDP) must be the same across countries. Empirical evidence has shown that per-capita incomes are not converging (growing towards the same level) across countries (Pack and Westphal, 1986:89). Furthermore, economies do not have the same rates of investment.

The long-run problem with the assumptions in the neoclassical growth model, coupled with the inability of the Cobb-Douglas production function to model the real world of technical progress, suggests that minimal government intervention may not be a necessary as well as sufficient condition for long-run economic growth. Another group of theorists began to develop a long-run economic growth model that attempts to overcome the problems of the neoclassical theorists. This growth model is known as the new (endogenous) theory of economic growth.

2.5 NEW (ENDOGENOUS) GROWTH THEORY

The previous sections on neoclassical growth theories showed that although technological change is central to explaining long-run economic growth, it is exogenously determined. This results in their failure to explain differences in technologies across countries. These technological differences help to explain why some countries are rich and others are poor. The new growth theory is designed to provide a model where technology is endogenously determined.

In the economics of production, technologies are ways of doing things. New methods of making existing products as well as new products are continually invented and put into use. Jones (1998:72) argues that new ideas or knowledge changes technologies in production. These technological changes make production inputs more productive. Examples of the impact of new ideas on technological improvement include the fact that in the 18th Century, light was generated

by means of candles. The modern-day provision of light in the households is through efficient fluorescent bulbs.

This section provides its argument on the basis of three premises: first, technological change is central to the generation of long-run growth. Consequently the new growth theory resembles the Solow (1956) growth model which reflects a variable of technical change. Second, the technological improvement is mainly influenced by intentional actions of agents who respond to market incentives. But this is not always the case, as for example with academic scientists. Third, the economics of ideas is different in that the cost of production is incurred only once, and the ideas can be used over and over again without attracting further costs. This fixed-cost property is regarded as a significant characteristic of technological change (Romer, 1990:72).

It is usual for growth models to use price-taking market structures. But the three premises highlighted above imply that price-taking behaviour cannot be entertained. The next subsections show why that is the case. They will provide an argument that motivates the existence of monopolistic competition (Romer, 1990:73).

2.5.1 Nonrivalry and nonexcludability

One of the significant characteristics of technological change is that it is nonrival. According to Jones (1998:73), technological improvement arises because of the invention of new ideas or knowledge. When a good such as knowledge is nonrivalrous, it means that its consumption by one person does not preclude another from consuming it. For example, when a car manufacturer uses the so-called just-in-time inventory method as a marketing strategy, another car manufacturer is not precluded from using the method. In contrast, economic goods such as compact-disc (CD) players are rivalrous. Their consumption by one person excludes their consumption by another person. For example, when 100 people seek to use the CD player, it will be necessary to provide them with 100 CD players (Mankiw, 2003:82).

Nonrivalry holds significant implications for the growth theory. Nonrival goods such as scientific law can be accumulated to an unlimited extent, and be used in many places at the same time. Rival goods like human capital have a limited life span. For example when a person dies, his/her knowledge disappears from the economic scene (Pack, 1994:64).

Nonrival goods need not be replicated, therefore the replication argument does not apply where factor inputs comprise rival and nonrival goods. If inputs used in production combine rival and nonrival goods and production of output is on a macro basis, then output will experience increasing returns to scale. The replication argument is as follows: $F(A,X)$ represents a production function that has rival input X and nonrival input A. If the rival input is replicated, the production will experience constant returns to scale:

$$F(A,\lambda X) = \lambda F(A,X) \qquad (2.6)$$

This argument neglects that nonrival inputs are used in more than one place at a time. Therefore

$$F(\lambda A, \lambda X) > \lambda F(A,X) \qquad (2.7)$$

Equation 2.7 shows a production function that exhibits increasing returns to scale. That is to say, replicating all inputs more than doubles output.

The presence of fixed cost implies that if the price is set equal to marginal cost, then the firm will suffer losses. This is because, if the first unit of a nonrival input cost is R10, this will also be the average cost of the first unit. At higher levels of output, the fixed cost, R10, is spread over subsequent units of inputs. Thus the average cost declines as more output is produced. Perfect competition requires that the price be set equal to marginal cost. Therefore, no firms will be prepared to enter this market and pay a fixed cost to develop a nonrival input if it cannot be in a position to fix the price at a higher level than the marginal cost of production. In reality, firms enter those markets only if they can fix the price above marginal cost. This affords them the opportunity to recover the fixed cost of developing the original design. Romer (1993:75) asserts that the production of new ideas requires that profits be earned and therefore precipitates a need to move away from perfect competition.

2.5.2 Technological progress as an engine of growth

This section incorporates the insights from the preceding section to develop a theory of economic growth driven by technological progress. The model envisaged in this section endogenises technological progress by introducing a sector of research and development (R&D) that produces new ideas. The ideas are used to manufacture capital goods in a monopolistic market structure that allows researchers to earn profit from their efforts. The sector that produces final goods uses

the capital goods as factor inputs. But, first, it is necessary to outline the basic components of the model and their implications for economic growth.

As was the case with the neoclassical growth model, endogenous growth theory has two elements: the production function equation and another equation that describes the evolution of inputs in the production function. According to Romer (1993:77), the production function in the model shows how the capital stock, K, and labour, L_y, interact to produce output, Y, using the technology, A:

$$Y=K^{\alpha}(AL_y)^{1-\alpha} \qquad (2.8)$$

Where α is the elasticity of output with respect to capital, $1-\alpha$, the responsiveness of output to labour and $\alpha+(1-\alpha)=1$, that is a 1% increase in K and L_y will result in a 1% rise in Y, which means that output exhibits constant returns to scale for a given level of technology A. However, with A being a nonrivalrous input, there are increasing returns to scale.

The doubling of inputs A, K and L causes the production function to exhibit constant returns to scale with regard to K and L, but it exhibits increasing returns to scale with respect to the three inputs A,K and L. For example, the creation of a design for new computers needs to be done once. What has to be manufactured over and over are the computers themselves (Jones, 1998:90).

The accumulation of capital K is dependent on how much economic agents save and invest. Capital depreciates at the exogenous rate d:

$$\Delta K=_{s}Y-dK \qquad (2.9)$$

Labour is exogenously determined, and grows at a constant rate n:

$$\Delta L/L = n \qquad (2.10)$$

In the endogenous growth model, the growth of A is endogenised. Jones (1998:91) describes ΔA as a stock of new knowledge produced at a given time by the number of researchers L_A times the rate at which they produce this knowledge ∂.

$$\Delta A = \partial L_A \qquad (2.11)$$

Therefore some of the labour is used in research and development, L_A, which together with the rest of the labour, Ly, produces final output Y.

$$L_A + L_y = L \qquad (2.12)$$

The rate of producing new knowledge by researchers can take many forms. One form may be that this rate is taken as a constant. Jones (1998:91) suggests that the rate can depend on the stock of knowledge produced already. For example, the production of ideas in the past may help boost the present rate of knowledge produced. In this instance, ∂ would be an increasing function of A. Other possibilities are that the simple knowledge was discovered first, and later difficult ideas were produced. Therefore, ∂ would be a decreasing function of A.

2.5.3 Growth in the model

The growth rate of the model can be read from the production function:

$$Y = K^{\alpha} (AL_y)^{1-\alpha} \qquad (2.13)$$

Romer (1993:81) notes that if it is assumed that the number of researchers producing knowledge is constant, the model will predict that all growth is due to technological progress. That is to say, the capital-labour *(K/L)* ratio, the stock of knowledge and output, all grow at a constant rate. Without technical progress, there will be no growth.

If technological progress is responsible for growth in the model, then according to equation *2.12*, the long-run growth is determined by the rate of growth of researchers, L_A, which is dependent on population growth rate. That means the number of researchers grows at the same rate as the population. Jones (1998:94) suggests that, in the event of no duplication in production of ideas and the rate of production of ideas not being dependent on the stock of ideas already discovered

in the past, the productivity of researchers will be constant. For example, if in $\Delta A = \partial L_A$ both ∂ and L_A are constants, then ΔA will be a constant. This will result in the rate of growth of technology shrinking over time. Consider an economy starting with $A = 0$ and researchers producing a constant production of $\partial L_A = 50$ each period of time. With the stock of knowledge accumulating and new knowledge constant at *50*, the *50* increasingly becomes a smaller fraction of the entire knowledge stock until the growth of knowledge becomes zero. In order to record growth, the amount of new knowledge must increase over time. Romer (1993:82) emphasises that this will occur if the number of researchers increases at the same rate as the population.

2.5.4 Critique of the endogenous growth model

In order to generate long-run economic growth in the endogenous growth model, the number of researchers must increase. This hinges on the rate of population growth. This aspect of the model can be viewed as a problem in finding evidence to support the contention that the growth rate of the world economy is contingent on the population growth. This implies that the growing population is one with technical skills that can be used for innovation processes. The model is suitable to fit the circumstances of the developed world. However, at the same time, the developing countries can learn a lesson from this implication. Overcoming problems such as poverty is essential to upgrade the skills of the majority of the population.

Criticism has also been levelled against the model in that it is new, and therefore empirical evidence to support its claims is yet to be collected. According to Pack (1994: 59), the model has generated great interest in the examination of the long-run determinants of economic growth. However, its empirical studies have been targeting the Solow neoclassical growth model instead of testing the endogenous growth models themselves. This has resulted in a need for empirical support for the model. Furthermore, the model claims that R&D has made great contributions towards improved growth rates. There is still a need for research that provides evidence to support this. It is therefore evident that the support of the model's ability to explain observed long-run growth inequalities and growth patterns across economies is considered to be weak.

The economic growth theories are relevant and important in the NMM's economic development. It will be necessary to draw upon them in the subsequent chapters (See 4.6.2).

2.6 THE ROLE OF GOVERNMENT POLICY IN ECONOMIC GROWTH

The government can play a significant role in influencing the rate of economic growth. The traditional roles of government (i.e. creating macroeconomic and political stability, enhancing microeconomic capacity through quality inputs, and determining microeconomic rules and incentives for competitiveness) are a necessary condition for economic growth, but are not sufficient. An increasingly significant role of government is that of affecting the rate of technological change through the use of the national system of innovation (NSI) (Metcalfe; 1995:30). This is a policy instrument used by governments to co-ordinate innovation and transfer technology.

It is important to recognise the determinants of the environment in which countries are enabled to develop technological capabilities. According to the neoclassical theory, countries attain these capabilities under free market conditions, by selecting the techniques suitable to their factor prices. Countries with abundant labour forces choose production techniques that are labour-intensive. However, Lall (1992:22) argues that in the modern economy, the presence of complex learning processes renders the ability to choose and deploy technological efficiency difficult. This is because satisfying the conditions of learning may involve market failures. It cannot be assumed that economies will over time automatically adopt the more complex technologies because of changing economic environments such as wages and interest rates.

Technological improvement requires risk-taking entrepreneurship that invests in more advanced, uncertain and long-learning processes. Lydall (1998:16) recognises that, in the presence of externalities which lead to market failures, these investments may not take place. They may need the backing of policies to overcome market failures. The standard economic theory justifies government intervention in the presence of market failure.

The role of government in intervening to overcome market failure is now widely accepted in development economics. However, Lall (1992: 23) notes that a debate exists over whether intervention should be aimed at overcoming generic market failures without being biased towards particular activities to the advantage of others, or should relate to selective elements. Examples of functional intervention are ensuring that primary and secondary schooling take

place, while selective intervention includes policy requiring the directing of resources at particular manufacturing concerns. The neoclassical theories no longer deny that market failures exist, but argue that policy should be directed at remedying only functional interventions. They further argue that selective interventions are not important as their costs are always below those of generic market failures. Lall (1996: 49) argues that this approach does not adequately show the experience of intervention in technological progress. The deficiency of the approach may lie with assumptions of the neoclassical theory on technology.

There is a need for a realistic framework that reflects the aspects of technological learning and that forms the basis for a set of policy prescriptions. Lall (1992: 57) looks at a framework that classifies the determinants of technological development into incentives, factor markets and institutions. The policy prescriptions are formulated on the basis of market failures that arise in each of these determinants.

2.6.1 Incentives

The incentives that influence investment in technological development include a sound and stable macroeconomic environment, trade policy, industrial policy, and domestic demand. Concerning trade policy, Lall (1992:24) points out that it enables a country to gain competitive advantage. This results from exposure to world competition, which stimulates the need to build technological capabilities. The building of networks through export markets is an excellent manner in which to acquire almost free technological information. It has been shown that export orientation is a better method of trade intervention than import substitution. Free trade is not completely optimal. This is because free markets fail to give correct signals for resource allocation in the face of market failure. According to Lall (1996:25), free markets can fail to invest in technological developments because of learning costs and learning periods, as well as externalities to production. This failure might emerge in problems of firms being encouraged to undertake difficult and scale-intensive technologies. Efficient intervention to remedy such market failures and restore efficient resource allocation must depend on activity on the basis of technology and linkages.

Trade interventions can be in the form of protection. According to Rodrik (1996:20), all these interventions should be properly monitored to overcome market failures, and once this has been accomplished, they can be removed. It must be realised that these measures are difficult to initiate because of the type of information necessary. Furthermore, they are susceptible to rent-seeking behaviour, and can dilute the incentive for learning.

Another method of incentive is to encourage technological capabilities by means of domestic industrial policies. This concerns the removal of barriers to competition, which contribute to the stimulation of technological development. Their role is also to protect intellectual property rights. Stiglitz (1996:169) notes that domestic competition is beneficial in removing distortions that have emerged because of import restrictions. Owing to scale economies found in industrial activities such as export marketing and investing abroad, and to technological development, it is advisable to promote competition that allows firms to commit necessary investment. Some governments use this strategy to allow their industries to enter difficult technology development and advanced export trade.

Domestic demand can play a significant role in affecting technological capabilities. The nature of demand influences the development of new products to meet the needs of sophisticated buyers. Porter (1998:34) recognises that the nature of the demand has more influence on the technological capabilities than the size of the market. It is important for local firms to first of all learn to satisfy local demand before they expand internationally. It is on this basis that the nature of the market plays a big role in innovation. Sophisticated buyers induce suppliers to differentiate their products.

2.6.2 Factor markets

Skills are regarded as the most important factor markets in technological development, followed by finance and access to information. The role of government in promoting education is significant. Capelli and Rogoosky (1994:211) emphasise that policies to promote human capital for developing technology may be selective at higher levels of education. The education system has to meet specific technical, engineering and scientific skills. What is important in new technologies is the need for a large range of technical skills. The education system might fail to

be proactive in providing for these needs. Therefore, a need for selective government intervention arises.

The role of government in factor markets looks at capital market failures which emerge from missing information and adverse selection. This type of market failure results in under-financing of technological investments. Stiglitz and Uy (1996:296) are of the opinion that interventions in capital markets can be made through subsidisation of credit to selected industries. Although this type of policy did not meet with much success in promoting technological development, countries such as the Asian Tigers have used it in conjunction with other incentives, as well as issuing a condition of competitive performance in export markets to beneficiaries of subsidies (Stiglitz, 1996:168).

2.6.3 Institutions

Institutions include organisations that encourage technological development, such as the education system, R&D and export information. These institutions may either be government owned, started by government but managed by industry associations, or relate to private interests. Nelson (1993:79) emphasises the importance of these institutions in efforts to encourage enterprise to develop technological capabilities. These types of interventions by government are often selective, in order to meet the objectives of industrial policy.

The rate of development of technological capabilities is contingent on the complex interaction of these institutions. Although market failures often call for government intervention, markets sometimes improve, and private economic agents use nonmarket methods to remedy market failures. The government can experience some failures in its interventions. With all the good intentions by government to intervene, the process may prove to be inefficient. This can be due to the failure by the government to design interventions properly in order for them to be selective, for example, in the case of import substitutions being unselective and offering protection to all industrial activities. Thus, activities encouraged through protection are not being backed by necessary skills and institutional support (Lall, 1992:27).

Although the history of development is littered with inefficient interventions, policy aspirations must include a component of improving intervention capabilities. Shapiro and Taylor (1990: 871) assert that the fact that policies have in the past been both poorly designed and implemented does not negate the need for intervention. The correct response on the role of intervention has to depend on the strength of institutions themselves.

The government, therefore, has a role to play in fostering economic growth in the NMM.

2.7 EMPIRICAL EVIDENCE

The previous sections indicated that theoretically technological progress is responsible for sustained long-run economic growth. An important contribution of these sections is the recognition that technological advancement occurs as profit-maximising entrepreneurs develop better methods of production. Economic growth depends on how each economy organises the use of changing technological competetencies.

This section begins to provide empirical evidence of technological improvements across Asian economies. Using several economic indicators and theoretical concepts developed in the previous sections, it attempts to establish to what extent the theoretical framework concerning technological progress as an engine of economic growth captures the reality of technological capabilities in the Asian economies.

2.7.1 Export performance

Export performance can be evaluated using various measures, but the most popular proxy for export capabilities is data on manufactured exports. Lall (1992: 31) argues that it provides evidence on international efficiency and reflects on structural trends. However, it may not be a suitable indicator in economies with large nonexporting sections, including economies that provide incentives which target domestic markets.

The export data will focus on ten Asian countries: the so-called Four Tigers (Hong Kong, Singapore, Korea and Taiwan); the so-called three new Tigers (Indonesia, Malaysia and Thailand); and the three countries that are characterised by an import-substitution past (India,

China, and Pakistan) . Most countries in the developing world place emphasis on the promotion of manufactured exports as a strategy for further industrialisation and for becoming competitive. The industrial centres in South Africa and the Nelson Mandela Metropole, in particular, are no exceptions. The Metropole strives, through the use of industrial policy, to transform itself into a competitive region. It is therefore relevant to examine the industrialisation of the Asian countries. These countries successfully transformed from being some of the world's poorest countries to being a success story of sustained economic development. An investigation into their economic strategies will give insight into the direction which the Nelson Mandela Metropole could take. Table 2.1 provides data on export performance for these Asian countries.

Table 2.1: Exports from Selected Asian Countries (2004)

	Merchandise exports			**Manufactured exports**
Country	Value ($ million) (2004)	Growth rate (1990-2000)	Growth rate (2000-2004)	Value ($ million)(2004)
Hong Kong	31.641	12.0	0.6	28.311
Singapore	61.820	14.7	11.2	59.130
Korea	99.102	14.1	7.9	93.350
Taiwan	97.811	11.8	6.4	87.440
Indonesia	13.134	7.1	24.1	25.179
Malaysia	62.233	11.9	19.8	43.917
Thailand	49.100	15.9	20.5	37.170
China	131.511	10.4	16.1	101.021
India	22.349	6.4	8.0	17.267
Pakistan	6.937	11.1	10.3	7.912

Source: Own Table derived from Word Bank Development Reports (2000 and 2005)

The Table shows that China, Korea, Malaysia, Singapore and Taiwan were the biggest exporters, both in merchandise and manufactured goods, in 1994. The rates of growth during the period 1990-2000 in Thailand, Indonesia, Malaysia, China and Singapore were the highest. In the category of the bigger Tigers, Korea outperformed Taiwan in terms of long-term performance; China showed a stronger long-term performance than the larger economies and it was the biggest exporter of manufactured goods by 2000 in the group. Lall, as cited in Kim and Nelson (2000:32) maintains that high export performance suggests technological intensity in production. However, the data in Table 2.1 shows less of the nature of technological capabilities. This is supplied in Table 2.2 that provides a technological breakdown of manufactured exports by these ten Asian countries since 1992.

Table 2.2: Distribution of Manufactured Exports by Technological Categories (%)

	China		Korean		Taiwan		Singapore		Hong Kong	
	1992	2004	1992	2004	1992	2004	1992	2004	1992	2004
Resource-based	6.3	8.3	3.8	4.1	6.8	6.1	3.3	4.4	3.7	5.2
Labour-intensive	58.4	50.4	27.8	21.3	32.7	37.4	8.5	11.3	54.3	46.7
Scale-intensive	11.2	6.6	27.2	31.0	13.9	14.3	10.5	12.1	4.2	6.1
Differentiated	17.2	25.2	35.6	42.1	30.9	31.2	46.3	41.4	21.4	26.7
Science-based	1.1	3.1	5.6	7.8	15.8	16.1	31.4	39.4	16.4	19.2
	Indonesia		Malaysia		Thailand		India		Pakistan	
	1992	2002	1992	2002	1992	2002	1992	2002	1992	2002
Resource-based	29.5	39.2	5.4	7.3	20.1	23.1	28.7	33.2	4.5	8.3
Labour-intensive	48.7	49.1	17.4	14.5	38.3	45.1	49.6	42.1	93.8	85.4
Scale-intensive	7.6	11.1	5.3	7.1	5.6	7.3	17.1	22.6	0.0	0.0
Differentiated	7.6	12.1	29.6	31.3	15.7	18.2	1.2	3.9	0.0	0.0
Science-based	0.9	1.8	42.3	43.1	20.3	31.3	3.4	5.1	1.7	3.3

Source: Own Table derived from UNITED NATIONS TRADE DATA (2004)

Examples of resource-based manufactured goods include oil refining and food processing, while labour-intensive processing are footwear and garments. Scale-intensive goods refer to length of production runs in manufacturing goods such as steel, paper and chemicals. Differentiated goods

include advanced machinery, TVs and power-generating equipment, while science-based products include examples of electronics, biotechnology and pharmaceuticals (Kim and Nelson, 2000:34). This classification can be useful in arranging the exports according to the level of technological capabilities of manufacturing. For example, labour-intensive goods tend to be at the low end of the technological ladder, where technical activities are low. The goods in the scale-intensive category require capital-intensive technologies. This category can be further classified into chemical and engineering industries (e.g. Automobiles). Automobiles entail more difficult learning and involve a larger variety of skills. Differentiated products include more sophisticated engineering goods, such as advanced design and research. The last three items in Table 2.2 fall into the category of technologically advanced products (Kim and Nelson, 2000:33).

Table 2.2 shows the technological breakdown of manufactured exports by the countries. Among the exporters in the labour-intensive category in 1992, Pakistan exported 94%, China 58%, Hong Kong 54%, India 50%, Indonesia 49%, and Thailand 38%. Lall (1996:33) notes that there was a tendency for labour-intensive exports to decline as economies adopted better technologies. The exceptions to these were Indonesia and Pakistan, whose share of labour-based exports had risen over periods in the Table.

The technological intensity of manufactured exports shows growth for most of the countries excluding Indonesia. Lall and Rao (1995:49) note that these figures confirm the high rates of technological progress in these economies. However, it is necessary to account for levels of technological capabilities in the export activities of these countries.

2.7.2 Levels of technology

The technological capabilities in the Asian countries are driven by different high-tech products. Lall (1996:37) emphasises that high-tech exports from one country may be driven by a combination of imported components with few local manufactured inputs, while in another country they may come from local design, equipment and engineering. The Asian countries have a variety of these acquired technologies. For example, in Malaysia, high-tech exports come from electronics. Their technological process and products have definitely attained higher levels. However, these products and processes still have a low local technological content.

Another example is Singapore, which has technological processes and products of a high standard of sophistication and skills. Their technological activities are driven by multinational corporations (MNCs) and contain many local technological components. However, much of their design and development is carried out abroad by the MNCs (Lall,1996:37).

In Korea and Taiwan, more local technological input is experienced. Much of the design is done locally. Lall (1992:37) observes that Korea has heavier industry and a larger R&D effort than Taiwan.

The literature on the Asian miracle of economic growth notes that the technologies of the Asian economies which developed during the 1980s, 1990s and 2000s were those in which the local people had no experience at all prior to this period. Adopting new technologies required high investment rates in physical and human capital. Kim (1997:87) reports that this achievement needed years of painstaking and cumulative learning. The role of education is therefore critical. Table 2.3 shows enrolments at three levels of schooling, including students studying abroad, and the adult literacy rate.

Table 2.3: Recent Educational Enrolments and Literacy Rates (Percentage of Age Group)

Country	Primary	Secondary	Tertiary	% tertiary abroad(a)	Adult literacy rate
Hong Kong	98	81	29	36	93
Singapore	99	83	25	28	91
Korea	97	96	51	5	98
Taiwan	100	91	44	3	89
Indonesia	97	47	15	4	86
Malaysia	92	61	12	40	81
Thailand	94	40	24	1	93
China	95	55	10	4	82
India	96	48	11	1	53
Pakistan	66	21	7	10	41

Source: Own Table calculated from World Bank Development Report (2000 and 2005)

There was a considerable degree of illiteracy in Pakistan and India. Some of these countries had a reasonable primary enrolment. Secondary enrolment rates were high in Korea and Taiwan. Hong Kong and Singapore were slightly behind. They were followed by Malaysia, China and India.

The economic literature views the effects of sharply rising educational attainments, particularly the emergence of well-trained managers, engineers and scientists as providing competitive advantage to the countries, in identifying new opportunities, and learning about new technologies. Lall (1996:41) stresses that these efforts facilitate the identification of new products and technologies, and make transitions to these areas more efficient.

2.7.3 Research and Development (R&D)

It has been stressed in this section that the Asian countries are largely reliant on imported technologies from the developed world. However, they undertake certain activities to absorb the complex technologies, as well as creating new technologies (Lall, 1994:46). Formal R&D

activity assists in attempts to capture the extent of technological activity. Table 2.4 provides data on R&D expenditure in the Asian countries, including five Organisation for Economic Co-operation and Development (OECD) countries that are listed at the lower end of the Table for the purpose of comparison.

TABLE 2.4: Research and Development (R&D) Expenditure

Country	Year	As % of GDP		R&D per-capita ($)
		Total	By industry	
Hong Kong	2004	0.3	0.6	20.2
Singapore	2002	1.5	0.9	164.1
Korea	2004	3.1	3.0	280.5
Taiwan	2003	1.8	0.8	185.1
Indonesia	2002	0.7	0.21	13.4
Malaysia	2001	0.4	0.08	4.2
Thailand	2003	0.8	0.07	2.1
China	2002	0.5	0.11	3.9
India	2002	1.4	0.21	4.1
Pakistan	1997	0.9	0.6	3.3
Japan	2004	3.5	2.1	1239.9
France	2004	2.7	1.5	551.7
Germany	2001	2.9	1.7	681.0
UK	2004	2.3	1.6	396.1
USA	2004	2.6	1.6	662.1

Source: Own Table derived from World Bank Development Report (2000 and 2005)

Table 2.4 shows R&D as percentages of GDP in Asia. Korea seems to be the leader in R&D investments. It spends 3.1% of GDP on this activity. This figure includes expenditure by both private industry and government. Private industry is shown in the Table as spending 3.0% of GDP. This expenditure compares favourably with OECD countries at the lower end of the Table. However, it spends one-third of the US expenditure in per-capita terms. Taiwan has a slightly higher per-capita spending than Korea. Singapore is a third country among these East Asian countries with a considerable per-capita R&D expenditure.

The foregoing discussion depicts the spirit of the argument that in the Asian economies, learning and technology absorption, huge investment in physical and human capital, and strong entrepreneurship together created a growing modern economic climate. These elements complement one another. Without forceful entrepreneurship, the returns to investment would have been low, as they had been in the 1960s and 1970s.

This claim places a large emphasis on the strength of entrepreneurship. The entrepreneurship sector is determined by the profit motive. One of the policy variables that could have contributed to the creation of a favourable technological environment was emphasis on exports. Firms were encouraged to sell to the international markets. They therefore managed to avoid diminishing returns associated with selling in a slowly growing domestic market (See 4.6.5).

2.8 CONCLUSION

This chapter outlined mainstream economic growth models that can be relevant for the Nelson Mandela Metropole to formulate its economic development strategies.

The classical growth models, including the Harrod-Domar growth model, neoclassical growth model and the new endogenous growth model form a set of economic growth theories which bear relevance to the significance of saving and investment in economic development. Developing economies have a great need for investment in infrastructural development, and both physical and human capital. There is also a need to enhance their technological capabilities. These challenges highlight the importance of increased saving and investment in these economies, in order to enhance economic growth.

Economic growth relies on the mechanism of promoting active participation by government. This can be achieved through the application of selective economic policies which promote investment for the development of infrastructure, physical and human capital, and the introduction of new technologies. Government's participation in industrialisation is justified on the grounds of imperfect markets in order to fill the gap that is left open by markets. Thus, the government must possess instruments which will implement effective and efficient adjustments.

The experiences of the Asian countries, in their efforts to achieve the transfer of new technologies, provide a sound basis for analysing the growth of developing economies. This chapter attempted to examine the experiences of these countries and their contributions to the improvement of their growth rates. The strategies which they adopted to promote technological capabilities included export-oriented growth. This was supported by the export of manufactured goods. Other elements of their strategy included the promotion of increased educational enrolments at secondary and tertiary levels, as well as enhancement of research and development efforts.

In this chapter, it becomes clear that the role of investment is critical not only in the theory of economic growth, but also in government policy for growth. Investment therefore needs to be analysed in more detail, particularly the question of why industries will invest in a particular region. This is the topic of the next chapter.

CHAPTER 3

THE THEORY AND POLICY OF INVESTMENT LOCATION

3.1 INTRODUCTION

The previous chapter indicated that an important objective for a nation is for its citizens to enjoy a high and rising standard of living. The ability to achieve this is contingent on rising economic growth rates. The nation's firms must use their resources productively in order to achieve high rates of economic growth. It was also highlighted that high and sustainable economic growth rates are dependent on technological progress and investment.

This chapter begins by examining the determinants of investment and technological progress. The rationale behind this examination is the present inequality of incomes between economies across the world. As mentioned in Chapter 2, the rate of technological progress is influenced by firms which are profit-seekers. Thus, the present chapter seeks to answer the central question of this study, which is why the so-called profit-maximiing firms will locate in particular countries rather than in others. For example, Germany is host to a number of world-leading manufacturers of luxury cars and printing presses. Switzerland is the home base for leading pharmaceutical and chocolate firms (Porter, 1998:1). These manufacturers make a huge contribution towards providing high and sustainable productivity growth rates in these countries. The central question to be answered in this chapter is why firms based in particular locations are able to gain and sustain competitive success.

Therefore, identifying the theoretical framework on which a country or region bases its economic developmental strategies is critical in providing a reasonable basis for evaluating a country or region's capabilities to attract firms to locate there. This framework will also enable one to highlight the challenges the location faces, and the potential that exists for further economic development.

Section 3.2 focuses on the theories of investment location. As the NMM strives to promote its economic development and continues to attempt to achieve competitive success, the various

locational factors are relevant to influence the rate of investment in the region. The discussion in the section will develop into modern applications of investment location theory, including Porter's Diamond framework and how it relates to the locational advantages that determine how firms are positioned.

Section 3.3 considers aspects of the policy of investment location. Analysing this policy helps to provide insight into the role of the NMM and the provincial and national governments in promoting the economic development of the Metropole

Section 3.4 presents some case studies of successful economic development within particular locations, such as Silicon Valley in the USA, which provides industrialisation experiences that bear evidence of the importance of creating an economic environment that focuses on developing technological capabilities in order to attract investment. Section 3.5 concludes the chapter.

3.2 THE THEORIES OF INVESTMENT LOCATION

This section begins with the examination of Marshall and Weber's theories. Thereafter, Dunning and Porter will follow.

3.2.3 The Marshallian Theory

Marshall (1920: 225) argues that when an industry has elected to locate in a particular area, it is highly likely that it will remain there for a long period. This is because locating in close proximity to firms of the same industry results in a flow of advantages. For example, inventions and improvements in machinery and the new processes introduced in organising business are discussed without delay. New ideas with constructive suggestions are taken up by neighbours and create a source of further new ideas. The concentrated industry also provides a constant local market for industry-specific skills. Thus more firms are attracted to the area, as more employers see an opportunity of employing workers who possess the special skills they require. This trend increases job opportunities, and the supply of labour with the needed skills grows in that location. Subsidiary industries are bound to also locate in the vicinity, as they aim to exploit the opportunities and supply the industry with material inputs and other appropriate services. The trade relationships that evolve between the industry and the growing subsidiaries strengthen

and develop into a viable industrial location which encourages new investments of further specialised subsidiary businesses that develop into several distinct industries which support one another.

Marshall (1920: 227) further observes that the cost of communication between distant places, the presence of new facilities that encourage the interchange of ideas between distant regions, and the reduction of freight tariffs for goods, reinforce the desire for firms to locate in close proximity. The increasing acceptance of Internet advantages in business, the globalisation of markets, and the improved access to information have made face-to-face communication unnecessary.

The theme of Marshall's theory of investment location hinges on the benefits of external economies that firms capture as a result of locating in close proximity. Marshall (1920: 265) defines external economies as benefits that are captured by firms as a result of growth in the scale of production. External economies are nonrival by nature, and nonexcludable. This characteristic makes them a public good, which arises from an individual investment in the development of new products and processes. External economies can be viewed as emanating from firms or industries located in close proximity. They are either positive or negative, and either static or dynamic. Dynamic ones are associated with innovation that encourages the upgrading of the economy (Bergman and Feser, 1999:11). Static types of external economies are associated with benefits that firms gain because they can access cheap factor inputs because of their close proximity to the suppliers. In this way, transport costs are reduced as the distance between the consumer of inputs and the supplier is reduced.

Dynamic external economies are characterised by the presence of innovative activities. Marshall (1920: 235) considers this in conjunction with the existence of concentrated industries. This situation has the potential for greater innovations, as one idea can be converted into many ideas through suggestions in discussions with neighbouring firms. Concentrated firms develop social, cultural and economic institutions among themselves, which include trust and business links. The combination of these forces plays a role in instilling evolutionary tendencies in the upgrading of the industry. In his analysis of economic prosperity through external economies

formed by concentrated businesses, Marshall illustrates the point that the choice of competitive strategy has a bearing on the environment. The type of industry structure and the source of competitive advantage that influences the choice of strategy are moulded on the environment. It is clear that the industry will migrate to places where it will reap such external economies. Furthermore, it is important to recognise that Marshall's analysis of the location theory resembles Porter's examination of the theory of firm structure, strategy and rivalry, as one of the determinants of competitive success, which appears in Section 3.2.3.1.4. In effect it will be shown that Porter (1998) develops Marshall's original reference to how inter-firm relationships may enhance economic development. From the preceding analysis, it can be inferred that in the presence of external economies, manufacturing firms will form clusters of industries in particular regions, thereby leaving other regions underdeveloped. In a similar fashion to Marshall (1920), Weber (1929) will argue in Section 3.2.2 that such externalities result from proximate location of firms.

3.2.4 Weber's location theory

In addressing the question of why industries invest in particular regions, this theory argues that important factors such as profit maximisation, labour costs, transport costs, the availability of markets for final goods, and agglomeration economies influence the decision. The following sub-sections will discuss each of these.

3.2.4.1 Profit maximisation

The concept of profit maximisation often dominates the analysis of locational choice in the theories of industrial location. Weber (1929:21) observes that firms locate where they will be able to maximise their profits. For example, assuming that other factors remain unchanged, a location with the lowest production costs will attract most investment because it will enhance opportunities for firms to maximise their profits. Mutambara (2004:9) describes this theory in most of its detail and concludes that there are a myriad of economic and non-economic factors that influence industrial locational choice, which make the notion of profit maximisation limiting in the analysis of industrial locational decisions.

3.2.4.2 Labour costs

Another consideration of the regional locational factors concerns labour costs. Weber (1929: 96) notes that the differences in labour costs can be viewed from two perspectives: on the basis of different levels of labour efficiency and wages, and because of variations in efficiency levels of companies as well the physical capital assigned to such labour force. The first perspective implies the existence of geographical relationship, as these differences in costs are fixed because of labour characteristics in a particular region. Thus they are relevant in explaining regional distribution of production. They are fixed differences in the sense that they depend on population levels and performance levels of the labour (human capital). The second (organisational efficiency and type of equipment in use) becomes a factor that determines location in a manner that is discussed in the agglomeration theory.

The strength of the influence of labour costs on location can be viewed in conjunction with the influence of transportation costs. Weber (1929:102) argues that for an industry to locate where labour costs have fallen, the opportunity cost between lower transportation costs and lower labour costs comes into play. The percentage change in labour costs must substantially be in excess of the percentage increase in transportation costs caused by the deviation from the minimum transport cost point to the new labour cost point. The significance of deviating to the location characterised by lower labour costs must be examined in terms of what is termed "co-efficient of labour". Weber (1929:110) defines this as the ratio of labour costs to the locational weight (the extent to which an industry may be relocated in terms of distance) of a particular industry. This is a characteristic that determines the labour orientation of the industry. Therefore, when the saving in labour costs is greater than the loss in transportation costs, then the location with less labour costs will be chosen.

3.2.4.3 Transport Costs

Weber (1929:4) observes that one of the significant factors that determine industrial location is the question of minimising transport costs. He further notes that this has to include the assumption that, excepting transport costs, everything else must remain unchanged in order to make transport costs minimisation the only focus of industrial locational decision-making. For example, the input markets and sources are normally given, and the required resources can be

accessed in a limited number of locations. This makes transportation costs the most important factor in determining investment location.

Regarding transportation costs, it is clear that industries will be drawn to those locations that have the lowest transportation costs. Weber (1929:4) indicates that transportation costs depend on the weight of the product to be carried and the distance to be travelled. For example, the nature of the transportation system might have a bearing on costs charged by carriers. Weber (1929:48) contends, therefore, that if weight and distance are the only determinants of transportation costs, then industries will locate at places where the fewest kilogram-kilometres originate during the production and distribution process. Such locations are identified by taking into account the distances from and to markets for raw materials and final goods. This means that the ideal location will allow the following transportation relations: the weight of materials used in the production must be moved to this location from the material deposits, and the weight of the finished good must be carried away from this location to the place of consumption.

3.2.4.4 Agglomeration economies

An agglomerative locational factor can be defined as an advantage in terms of lower cost of production or marketing that results from the fact that an industry is producing its output from one place (Weber, 1929:126). With a certain degree of concentration of firms, the costs are smaller than they would be if the industries were dispersed.

Weber (1929) is regarded as the first location theorist to examine agglomeration tendencies. According to him (1929:133), these tendencies determine the choice of a particular region when the other regional locational factors such as lower labour and transportation costs are kept constant. For example, industries that locate near one another because of lower labour costs will not be considered as agglomeration. Again, agglomeration will be proved when more than one firm locates at the site, and the advantages they gain by so doing exceed the benefits of concentrating there because of lower transportation costs. Agglomeration economies arise not because firms take advantage of labour or transportation costs, but because close proximity of firms by itself has the potential to create locational advantages. These advantages are of a dynamic rather than a static nature. Firms that gain them are able to sustain their competitive

positions. This is because the advantages take time to be matched by other firms. Furthermore, because of the continuous flow of ideas among agglomerated industries, innovation creates the possibility for the industries to upgrade through the invention of new processes and products.

3.2.4.5 Critique of Weber's locational theory

Weber's agglomeration theory has been strongly criticised on the basis of its being uncharacteristic of reality. Isard (1960:180) indicates that society develops over a long period of time. Therefore, at some point in history, one finds some existing structure of companies that are already producing. For these firms to relocate involves opportunity costs, as the old structures will become obsolete. He emphasises that the existing plants already enjoy agglomeration economies of either labour orientation or any other type. The existing production centres serve as geographical foundations for new plants to gain localisation economies, as they establish themselves around the existing ones. This evolutionary approach to the agglomeration theory is a critical factor of location. Any theoretical application that does not make reference to existing structures has a limited significance.

Furthermore, Isard (1960:180) stresses that even if the issue of opportunity costs could be overlooked, there are many other issues that dictate that moving to a point of agglomeration deviates as little as possible from the minimum transport cost location. These issues include the difference in bargaining abilities of managers of such plants. Therefore, it will be required that the geographical centre of agglomeration be near to companies with greater bargaining ability. Weber's analysis of location in all its spheres highlights the significance of cost minimisation because of close proximity to inputs or markets. This approach has been made obsolete by the globalisation of markets, the rate of technological change, reduction in transportation costs, and easier communication methods (Porter, 2000:15). Modern thinking on location is dominated by innovation owing to clustering of firms that are able to capture positive externalities. Section 3.2.1 touched on the locational advantages of external economies. This line of thinking forms part of the following sections on location by Dunning (1995, 1997) and Porter (1990, 1998). Note that no critique has yet been offered on Marshall's theory. The purpose is to provide a combined critique on geographic concentration at the end of this section on investment location theories.

Weber's theory will be relevant in examining the level of competitiveness of the industries in the Nelson Mandela Metropole, and will be drawn upon to gain insight into the strategies mostly utilised by the Metropole's firms. It creates a critical basis for entrepreneurs to ascertain which strategies are suitable in competing to achieve a sustainable success in industry.

3.2.5 Modern application of the investment location theory

These contributions make use of the concept of industry clustering as an instrument to explain industrial location. The authors who have made these contributions including the theory of innovative environment include Porter (1990, 1998) and Dunning (1995, 1997). Mutambara (2004: 14) observes that experiences from both developed and developing economies have demonstrated the potential of clustering in enhancing competitive advantage.

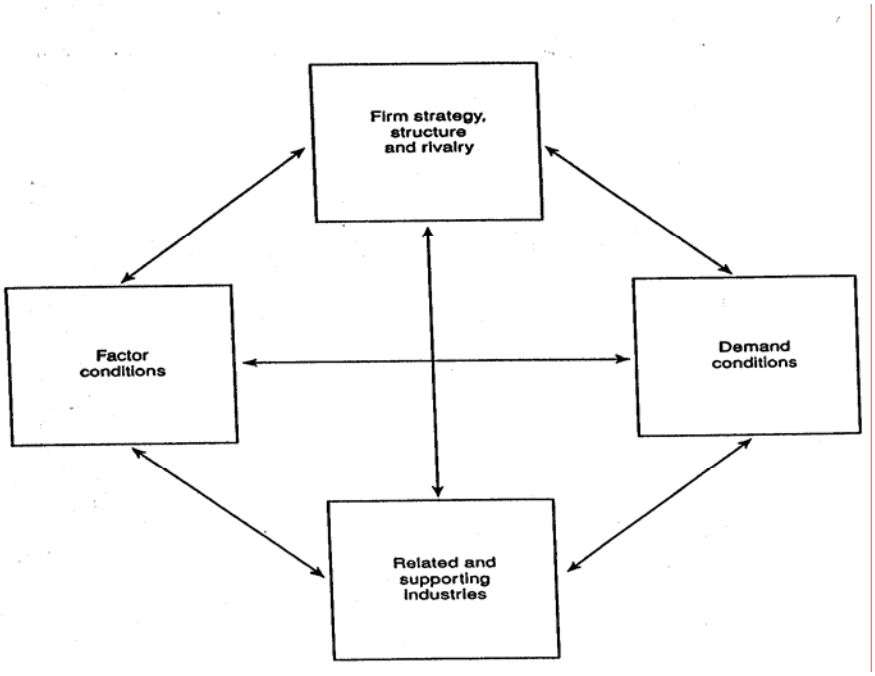
Clustering occurs where a country's competitive industries become involved in relationships such as those that exist between buyers and suppliers (Porter, 1998:149). These kinds of relationships influence these industries to locate in close proximity to one another in order to facilitate the flow of information among them. In this way innovation is promoted, which helps the industries to sustain competitive advantage. With the member industries investing in new processes, spillovers emerge and lead to the encouragement of new entrants to the cluster (Porter, 1998:151).

3.2.3.1 Porter's Diamond framework

Porter (1998) developed a framework that strongly emphasises the role of industry clusters in enhancing productivity in industry. This framework, as illustrated in Figure 3.1, stresses that gaining competitive success and developing industrial clusters are intertwined, and strong clusters promote economic development.

The framework comprises four attributes: factor conditions, demand conditions, related and supporting industries, and firm strategy, structure and rivalry. These attributes work as a system to determine the national competitive advantage, and form the basis on which firms are established and compete. They are discussed in the sub-sections below.

Figure 3.1: Porter's "Diamond" of Competitive advantage



Source: Porter (1998: 72)

3.2.5.1.1 Factor conditions

These consist of basic (or generalised) and advanced (or specialist) factors. The former refers to features such as general infrastructure, secondary schooling, raw materials, and natural resources (Porter, 1998:77). The basic factors are insignificant insofar as the creation of competitiveness is concerned. This is because they need minimal investment for their creation, and are readily available. Their attributes make them easy to replicate, and therefore do not facilitate the sustainability of competitiveness.

However, Porter (1998:132) argues that basic factors become significant as they form the basis for the creation of advanced factors. This process requires factor creation mechanisms such as R&D centres. Through increasing investment in R&D, advanced factors are produced. It can be inferred that an economy that has high levels of advanced factors becomes an attractive investment destination. There is also an implication that such economies become more

competitive, since advanced factors are unique in nature and are not readily available like basic factors.

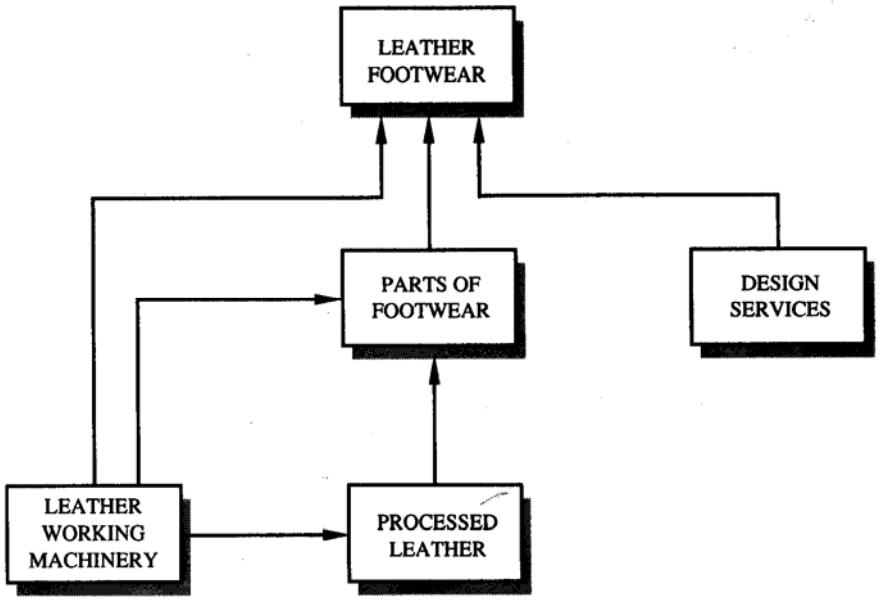
3.2.5.1.2 Demand conditions

"Demand" refers to both demand for intermediate goods and consumption of final products. Porter (1998:86) claims that strong home demand influences local firms to achieve competitive advantage. It is this ability of local demand that encourages local firms to increase their investment levels. Three elements of home demand are significant in order to help upgrade competitive success of local firms: the nature of buyer needs, the size of home demand, and the mechanism through which such demand is conveyed to the markets. The most significant of the attributes of home demand is the nature of buyer needs. Firms have to learn to satisfy local buyer needs if they want to be successful in competing internationally. The presence of strong backward (to the raw materials and inputs) and forward (to the market) linkages between firms reinforces the efforts to have an effective demand for entrepreneurs, and contributes to attempts to innovate.

3.2.5.1.3 Related and supporting industries

These are industries with shared locational requirements. The geographic concentration of these industries enables them to compete and co-operate with one another. They include industries that fall within the value chain (suppliers and customers) as well as those that bear relevance to the value chain but fall outside it (Porter, 1998:101). Figure 3.2 illustrates related successful Italian footwear industries.

Figure 3.2: Italian footwear supplier industry



Source: Porter (1998: 101)

Porter (1998:102) claims that the presence of competitive supplier industries creates spin-offs for downstream industries. This is because of access to cheaper inputs. Figure 3.2 shows that the Italian footwear industry is characterised by some firms supplying machinery to the industry, while other firms provide new material such as leather, and others are involved in leather processing. This arrangement creates an advantage through co-operation among the firms. Mutambara (2004:16) observes that geographic concentration of related firms results in an increased rate of development that is essential to reinforce factor conditions such as logistics and technological improvement centres, training programmes, and the creation of specialist skills. It can be argued that the presence of such industries is of great importance in the creation of backward and forward linkages within and outside the value chain.

3.2.5.1.4 Firm strategy, structure and rivalry

This fourth attribute of the Diamond seeks to establish a context in which firms are organised and managed. Porter (1998:107) points out that rivalry among firms is significant in encouraging competition and innovation. Rivalry can be stimulated by varied internal

diversification, external economies resulting from long-established companies, earning reputation from producing quality products, the desire to strive for technological excellence, and international competitiveness. When firms position themselves in an industry and begin to compete with one another, this can result in technological advancement and innovation, which upgrade the industry through an improved business environment and enhanced productivity.

It can be inferred that firm strategy, coupled with industry structure and rivalry among firms, constitutes a stepping stone to increased economic development, as firms increase investment in R&D. The innovative processes that follow help to diversity operations and capture a larger market (Mutambara, 2004:16). The implication is that rivalry spurs firms to increase innovative efforts and sustain competitiveness. This is conducive to providing an environment that encourages long-run investment that further improves productivity.

3.2.5.1.5 The Diamond as a system

Competitiveness in sophisticated industries does not come from a single attribute of the Diamond. The Diamond as a system may be useful in describing an economic environment of a nation. The nature of the interaction of the four attributes shows the manner they reinforce one another and provides an environment that supports continued industrialisation. The capabilities each attribute has, strengthens the diamond as a whole in order for it to create a strong environment that supports increasing productivity and thereby attracts foreign direct investment (FDI) (Porter, 1998:146).

The level of capacity in each of the four attributes is significant. For example, the low levels or absence of specialist factors can have a negative impact on the availability of effective local demand that would provide competitive success. Weak related and supporting industries affect the presence of strong backward and forward linkages. Poor demand conditions on the basis of the nature of demand are shown by low per-capita incomes. According to Porter (1998:147), these weaknesses in the Diamond result in low productivity growth rates. He further asserts that investors will be discouraged by low returns to their capital because of poor productivity.

The Diamond is relevant to show the challenges that the Nelson Mandela Metropole faces. Because of its comprehensiveness, it will be used as a measure of government's role in economic development in Section 3.4 on the theory of policy, as well as Section 3.5 on empirical evidence.

3.2.5.2 Contributions by Dunning

Dunning (1995) offers the principle of "alliance capitalism" as an explanation of locational advantages. He refers to geographic concentration of firms as co-operative alliances in which firms compete and co-operate in the value chain. The quality of relationships in these alliances is significant in determining the development of competitive advantage. Dunning (1995:471) asserts that close interaction and networking among firms encourages trust, which supports them to innovate in order to achieve higher economic performance.

The advantages that are pertinent to the presence of these alliances include: the aim to minimise transactional costs and improve methods of communication, the creation of new assets and improvement of skills of the personnel, retention and acquisition of new firm-specific advantages, and gaining access to new technologies that will improve productive efficiency.

The theory of networking in alliances will be drawn upon, for example, in Chapter 5. As Porter (1998:149) observes, networking is the domain of organisations such as trade associations, which are supposed to encourage networking in industries. Unfortunately, as he observes further, these associations remain only as lobbying instruments.

3.2.5.3 Critique of the role of geographic concentration

Section 3.2 highlights various underlying theoretical approaches to explaining location investment. Although these approaches are different, they commonly discuss the dynamics of geographic concentration and the opportunities that emerge from them, in order to capture knowledge-related external economies that contribute to the emergence of increasing returns. New developments such as globalisation of industries and the fall in transport and transactional costs have resulted in views that question the importance of geographic concentration of firms. The theories on investment location have implications for the NMM. It will therefore be necessary to draw upon them in the remaining chapters, particularly in research Chapter 5.

One of the criticisms concerns the nature of knowledge. Krugman (1991:56) notes that knowledge is an intangible commodity, and it is therefore hard to evaluate its effect on economic progress. Of course, knowledge-based externalities have an important role in influencing firms to concentrate in a particular locality. However, this may not be the only source of localisation. Firms may also be attracted to a particular region on the basis of cheaper transport costs. This cheapness of costs can also lead to the emergence of increasing returns.

Another criticism is directed at the assumption that geographically concentrated firms benefit from efficient exchange and flow of information because of their closer location. Hansen (2000:4) objects to this claim as being unfairly applied if it arises only because of the structure of these firms. He claims that there is evidence that indicates that even where industrial plants are dispersed, information can be diffused among them. This criticism is supported by the view that even in closely situated businesses, certain members may reserve certain information for their associates in other regions.

The success of close communication in geographically proximate industries is supported by empirical evidence available from existing clusters. The example of New York's financial clusters nullifies the validity of these criticisms. Marshall (1920:226) argues that such clustered financial industries will continue to exist as long as their skilled personnel prefer to have a closer communication in order to co-ordinate their operational activities. He makes an example of England's industrial districts and the role of advanced skills in keeping these clusters successful. Norton (1999:3) questions the fact that business can prosper even if it is conducted in close proximity to the competition. However, Porter (1998:153) clarifies this by noting the importance of localised economies in facilitating rapid information exchange. Firms can co-operate and at the same time compete. This serves to stimulate innovative activities.

3.3 THE THEORY OF INDUSTRIAL POLICY

3.5.1 Introduction

The theory of industrial policy is a wide-ranging subject, and its coverage here is limited to those policies which have a particular bearing on investment location. It is essential to discuss the

theory of economic policy, as Chapters 5 and 6, (the chapters on research and policy recommendations for the NMM) will require an understanding of policy implications. Therefore, this section will provide a background and theoretical support for economic policy recommendations to be presented in those chapters.

3.5.2 Theoretical basis of industrial policy

The Department of Trade and Industry (2002:47) points out that the critical components of a government's economic policy include trade, investment, technology development, human resource development, and industry structure. The nation's views on the debates surrounding each of these components inform the economic policy. For example, as the neoclassical economic theory assumes, if markets are efficient in resource allocation, optimality will be reached without the government's intervention. Thus these components would be left to market forces to determine the optimal resource allocation. However, markets are inefficient, and therefore government is required to intervene on the basis of the extent of market failure. The sections below discuss how such components can influence government's economic policy.

3.5.2.1 Investment and economic policy

Most countries in the world, particularly the developing world, experience deficiencies in capital formation, and this constitutes a constraint towards adequate investment to promote economic development. However, a nation's view on the role that foreign investment plays in economic growth and the extent to which foreign capital will impact on the economic and social goals of the nation inform the design of the economic policy. It is therefore argued that the policy could either promote or deter foreign investment, depending on how the usage of incentives is handled (Porter, 2000:32).

In the event where foreign investment is looked at as a necessary component to drive economic development, the government will design a policy that offers incentives to the prospective investors. Such incentives are contained in investment promotional programmes that aim to develop industries in particular locations with a view to boosting the economy of those selected locations. The modern approach in industrial policy is to develop clusters which will create

backward and forward linkages in that region in order to encourage development of new technologies and promote innovation.

Foreign direct investment is viewed as complementing a nation's own saving and investment efforts, and therefore the country does not have to entirely rely on it. The economic policy reflects this view by ensuring that foreign investment does not weaken the sustainability of existing national investments. According to Weiss (1988:319), economic policy will focus on certain industrial locations in directing foreign investments, in order to protect existing national operations. It will also allow foreign investments in regions where it will enjoy bargaining powers on the terms of investment. Some of the terms to bargain on include negotiating the formation of joint ventures, absorption of locals into the management structure of the investing companies, and agreeing on a percentage of the workforce that must constitute the local personnel.

3.5.2.2 Trade and economic policy

The nation's view on economic policy includes the influence of free trade, as contrasted to protectionism. According to the neoclassical view on trade, trade liberalisation results in optimal resource allocation. Technology diffusion and access to information are improved as the world markets interact without boundaries. This results in increasing returns to scale because of external economies that are gained in the global markets (Romer, 1990:72). Producing for the world markets reinforces Porter's Diamond (Section 3.2.3.1) in that firms become internationally competitive through the sophisticated demand they face. In this case, economic policy is adopting an export-oriented stance, which enables the nation to earn foreign exchange. This implies that policy will have incentive regimes that encourage firms to produce for the export markets. Such an economic policy uses export-orientation industrialisation as the nation's strategy to drive economic development. Export-orientated industrialisation emphasises economic liberation as an outward-looking policy strategy that aims to create advantages of opening markets across economies and encouraging exports (Schmitz, 1984:11; Todaro, 2003:112).

Trade liberalisation is sometimes criticised because of market failures associated with it. These result in imperfect competition and allocative deficiencies. Furthermore, firms are not properly prepared to face the challenges of fierce international competition. If this view is accepted, then firms will lobby for the design of a protectionist policy. The granting of these criticisms against free trade needs the government to intervene and design a policy that promotes import substitution industrialisation. According to Lall (1996:108), intervention measures can either be functional or selective. Functional measures use instruments to correct market failures without favouring any particular activity, while selective remedies focus on specific market failures.

3.5.2.3 Human resources development and economic policy

Investing in the development of human resources increases the level of skills in the economy and, in turn, high productivity growth rates are achieved. As mentioned in Porter's Diamond, Section 3.2.3.1, economic development needs specialist factors because they enable the economy to become competitive. Investment in human resources becomes part of the economic policy in order to enhance technological advancement, including the generation of new knowledge to improve organisational skills. As indicated in Chapter 2, the growth success of the East Asian Tigers was partly facilitated by investment in human resources. Mutambara (2004:36) observes that, as technological capabilities increase and skills become more diversified, the range of specialist skills enlarges, thereby rendering specialist training more critical. This calls for the need for an economic policy that supports investment from private and public saving.

The success of the policy relies heavily on programmes that include government subsidies, tax relief, and a variety of incentives that encourage companies to pursue programmes of training and financing human resource development (Porter, 1998:461).

3.5.2.4 Technology development and economic policy

Neoclassical economists assume that technology is fixed, and therefore can be diffused into any economy at the same rate. They further assume that factor markets operate freely. However, according to Romer (1990:76), the assumption does not explain income disparities across countries. He further argues that countries achieve sophisticated technologies through committing huge investments in research and development. The Department of Trade and

Industry (2002:49) insists that government has to create the correct environment for firms to invest heavily in R&D. This needs the inclusion of investment for technological progress in the economic policy.

Lall (1992:91) argues that some countries have relied on imported technologies. In such a case, economic policy will stipulate that technology be imported with FDI as the main vehicle. The Department of Trade and Industry (2002:51) observes that, in the event of importing technology, the policy framework must include provisions to see that appropriate technology is diffused, stipulating the processes to import technology and the countries from which to import. Examples of technology imports through FDI include cases where foreign-owned ventures supply the hardware and software, manage the start-up, train the personnel, and adapt the technology (Lall, 1996:71).

In the event of importing technology, including accepting initiatives to generate local technological capabilities, the government's policy measures will include: increased direct government expenditure on R&D, incentives to private enterprises to encourage investment in R&D, and supporting and protecting local infant industries in order to allow them time to develop technological capabilities (Weiss, 1988:317).

3.5.2.5 Industry structure and economic policy

The structure of industries may be such that there are activities that are regarded as risky in terms of accessing capital in the markets. It therefore becomes important for government to have a policy that focuses on industry structure, to ensure that large as well small companies are supported, in order for them to survive the challenges of development (Weiss, 1988:311).

Government's economic policy could be designed to use measures such as tariffs, fiscal incentives and credit allocation to encourage output growth in order to meet certain stipulated output targets. The policy's efforts to promote small-scale and large-scale industries would require balancing the allocation of resources between the two types of enterprises. Intervention measures would include advisory services, management and training and credit provision so as to meet resources requirement of the two industries (Weiss, 1988:311).

The application of economic policy has implications for the NMM. As mentioned earlier, the Metropole is the backbone of the economy of the Eastern Cape Province, and as such it has geared itself to attract foreign investment to complement any local investment it has so far acquired. The theory of industrial policy will be used as the study progresses, to analyse the economic development of the Metropole. The remainder of this chapter will look at some case studies that reflect empirical evidence in terms of investment location.

3.4 SOME EVIDENCE OF SUCCESSFUL CLUSTERS

It was pointed out in Section 3.2.3 that modern investment location theory is closely associated with successful industry clusters. Investment is therefore attracted to the regions where industries are concentrated, which are characterised by backward and forward linkages. These linkages are based on trade of goods, exchange of information, and provision of skilled human resources. Cultural ties and social capital also have a role in linking economic agents and creating observable behavioural trends.

This section will discuss case studies on successful industry concentration. It is relevant because the concept of clusters is becoming more and more relevant in South Africa and particularly in the NMM. Clustering can also support small business to overcome developmental constraints and to embark on export-led growth. Porter's Diamond (see Section 3.2.3) and some of the other theories of location will be used to establish their relevance to these case studies.

3.4.1 Silicon Valley in the USA

This location is an example of an industrial cluster. It is known for its top-performing computer industry. The Department of Trade and Industry (DTI) (2002:51) and the Department of Economic Affairs, Environment and Tourism (DEAET) (2000:21) report that this region has seven industry clusters. Four of them (semiconductors, computers, defence, and services) form the cornerstone of the cluster, as they were established long ago. The other three (software, bioscience and environment) have emerged from the success of the first four. These clusters account for about 30% of job creation in Silicon Valley.

This is an example of industries locating in close proximity. The presence of links among firms contributes to cooperation and competition. Fountain (1997:15) emphasises that these links result in high levels of innovation. One also understands that the buyer-supplier relations and arrangements of outsourcing are some of the aspects that characterise these clusters.

3.4.1.1 Success owing to Factor conditions

The previous section has indicated that competitive advantage is supported by created factors such as specialised ones. These include a skilled workforce and sophisticated infrastructure. Porter (1998:75) contends that these factors contribute to the national advantage on the basis of their scarcity. Such scarcity makes them difficult to access without the commitment of large investments.

Silicon Valley enjoys some cluster-related programmes. The region has a skilled workforce that is necessary for maintaining high standards of production. Joint Venture Silicon Valley (1993:18) reports that the high standards of production are advantageous in supporting the marketing strategies of the region. Factor-creation mechanisms such as universities, research centres, and technological institutions, play a significant role in creating competitive advantage in the clusters. Stanford University in Silicon Valley conducts R&D. This has resulted in the formation of high-performing companies such as Hewlitt Packard. Fountain (1997:15) mentions other universities that support the creation of factors in Silicon Valley. These include Berkeley and Santa Clara universities.

The presence of leading research centres such as those at the above-mentioned universities has improved the potential for innovation. This is supported by the fact that most economic stakeholders congregate in close proximity, and thereby maintain strong relationships with one another. This partnership between government, business, and universities facilitated the campaign to create awareness about the industries' requirements and goals. The universities have also offered private tuition to employees in the clusters. According to Saxenian (1994:47), the education system in Silicon Valley is such that it provides for the needs of an increasing supply of skilled workers, as well as a constant supply of scientists and technical staff. Saxenian (1994:51) suggests that the participants in the clusters appreciate the benefits produced from the

functions of cluster-based relationships. Participants in these partnerships are kept informed of topical issues through conferences and trade shows. These events provide, on an ongoing basis, information on technological advances.

3.4.1.2 Supporting and Related Industries

The presence of supporting and related industries in geographically concentrated industries suggests that the flow of information and the exchange of ideas are enhanced. Silicon Valley is characterised by a supply of equipment manufacturers, advanced service providers, component manufacturers, and suppliers of materials. This is compatible with the pattern of clustered business. The economies of scale that result from this arrangement lead to lower production costs (Porter, 1998:146).

The agglomeration of firms helps to promote the interchange of ideas. This enhances product differentiation because of a faster pace of information flow. Joint Venture Silicon Valley (1993:16) reports that the area exhibits an efficient technical supplier base. This type of setting facilitates the measuring of buyer needs and a quicker response to meet these needs. The degree of networking among these related industries characterises the clusters at Silicon Valley.

The industries located in the Silicon Valley clusters are comprised of service providers that resolve problems in the technology industry, capital venture, law firms, investment bankers, market researchers, accountants, and employment agencies. Furthermore, the service providers include firms that are concerned with nurturing the up-and-coming companies. Kenney and Von Burg (2000:2) assert that Silicon Valley exhibits the uniqueness of being able to develop new industries and clusters. The agglomeration economies are measured by their ability to enhance cumulative competitive advantage. This happens when the cluster improves over time and productivity of resources improves because of increased innovatory activities. Continuous resource productivity creates a climate for the development of new industries and clusters, and is a sign of success to spur economic development.

Myrdal's theory of dependency highlights the evolution of new economic relationships at a particular location (See Section 3.3.3). Kenney and Von Burg (2000:5) argue that Silicon Valley

possesses evidence that supports the dependency theory. Silicon Valley has institutions that specialise in the formation of new firms. These institutions have gained a lot of experience over the years in forming and nurturing new companies. What is important is the diversification of expertise that these institutions apply to nurture new firms. The success of this operation has resulted in feedback mechanisms that help to raise awareness about the formation of new firms.

3.4.1.3 Demand conditions

According to Porter's theory discussed above, the nature of demand is more important than the size of demand. The nature of demand is determined by the character of consumers. The more demanding as well as the more sophisticated they are, the more pressure is put on firms to meet these needs. Porter (1998:149) recognises that when one firm satisfies the needs of more demanding and sophisticated buyers, consumers will support those firms. Similarly, other firms will locate in that area in order to capture a share of that demand.

Silicon Valley is characterised by a host of sophisticated buyers such as those in the fields of electronics. Joint Venture Silicon Valley (1993:14) asserts that the effort to meet sophisticated buyers needs leads to improved innovative efforts. The increasing standards of innovation open opportunities for firms to sell abroad. Joint Venture Silicon Valley (1993:15) indicates that the export trade of the valley has increased tremendously over the years. This reinforces the economic development of the region through the income generated by export business. The multiplying effect of these injections to their economy boosts the region's economy. The multiplier effect includes the employees, who spend their improved salaries at local firms. Increases in income induce a climate of innovation as local and foreign buyers demand more sophisticated stuff.

3.4.1.4 Firm Structure, Strategy and Rivalry

Firm structure can affect firms' management strategies and influence rivalry among firms. As shown above, Porter (2000:35) argues that geographic concentration of industries is a vehicle to bring firms, government, and institutions together in an attempt to create a constructive dialogue about economic upgrading. The presence of clusters encourages firms to develop interest and become more engaged than they were in issues such as innovation and competition. Meyer-

Stamer (1996:3) suggests that direct competition as evidenced in clustered industries is conducive to improving productivity through innovation. Thus, competition induces vigorous rivalry. This is reinforced in a concentrated industry such as in Silicon Valley.

Silicon Valley's economy has a structure that consists of firms, industries, and institutions that are all situated in a manner that facilitates interaction among them. Fountain (1997:13) claims that this sort of structure leads Silicon Valley to a distinct level of efficiency and adaptability. The structure encourages effective networking among the industries. For example, institutional structure has been altered to accommodate a faster pace of information flow. The management structure is flatter than before. This has resulted in more autonomy for the various departments of firms. Departments can now formulate their own strategies concerning innovation. Saxenian (1994:53) claims that bigger autonomy for the branches of firms creates more rivalry. This is because these different entities take ownership of the strategies that they use to innovate. Thus, the success or failure of these strategies is theirs.

Silicon Valley is an example of how the geographic concentration of firms can contribute to higher levels of productivity. Several authors such as Porter (1998), Saxeman (1994), and Kenney and Von Burg (2000) agree that Silicon Valley has characteristics of an economy that has gained external economies from geographic concentration of industries. The geographic concentration of economic stakeholders in Silicon Valley has contributed to the presence of advanced production factors, sophisticated demand, an array of related and supporting industries, and high levels of rivalry. Porter (1998:82) argues that, as far as competition is concerned, it is not inputs that matter, but productivity. This necessitates the understanding of clusters. This understanding implies several issues of strategic agendas such as choosing location and working collectively.

3.4.2 Understanding the geographic concentration of industries

This section includes some more case studies that highlight the advantages of firms in locating in close proximity to one another. The globalisation of economic activities has induced some firms to locate in low-cost areas. Porter (1998:85) suggests that the understanding of concentrated industries interprets these cost-related advantages as misleading. More often than not, economies

that are characterised by these advantages have inefficient infrastructure and lack sophisticated suppliers.

What is more important in achieving the competitive advantage is the role of location in innovative activities. Porter (1998:86) claims that clusters are a precondition for companies to choose bases for core products and R&D processes. He further argues that locational choices must include the entire systems costs as well as innovation potential, and not only input costs. A successful cluster will offer a base for every product. For instance, Hewlitt Packard has chosen California where all the world's leading personal computer businesses are operating. Massachusetts was chosen by Hewlitt Packard for being the home of the world's leading research hospitals and medical instrument companies.

The modern environment has rendered the concept of comparative advantage obsolete, through the creation of competitive advantage. Porter (1998:86) claims that companies, as they become exposed to world competition through globalisation, shift their activities to clustered industries. For example, Nestlé relocated its confectionary unit (acquisition of Rowntree Mackintosh) to York, England, which is renowned as a vibrant food cluster. England has sweet-toothed consumers, coupled with highly competitive media firms. This location constitutes a vibrant environment for competing with Switzerland in chocolate production.

Networking in a concentrated business location is significant in accessing important resources. Porter (1998:87) suggests that, in order to access valuable resources in a cluster, one needs personal relationships and face-to-face contacts. Location alone provides the potential for economic development, but does not guarantee its realisation. Networking supports the upgrading of the cluster. For example, Massachusetts is home to biotechnology clusters. This arrangement consists of universities, medical centres, and venture capital firms. One can also consider Genzyme – a pharmaceutical firm in Massachusetts. When it was felt that it needed to upgrade to a manufacturing unit, it relocated to the New Jersey and Philadelphia areas. These areas offer resources that Massachusetts did not have. Its clusters have established operations in drug manufacturing. Genzyme embarked on several initiatives in partnerships with the

government to improve the labour force. These initiatives are concerned with the provision of scholarships to the local youth. This was Genzyme's contribution to its cluster.

Another important aspect in understanding clusters is working collectively. Porter (1998:87) argues that the cluster approach suggests that firms reap the benefits from local assets and institutions if they adapt to working collectively. This will be bypassing the thinking that investing in public goods is normally the responsibility of a government. Historically, collective action has focused on obtaining government subsidies. This action can lead to distorted markets. This work is usually done by trade associations. They lobby with government for subsidies. Danielson (1988:82) claims that trade associations can, at best, provide a forum for the exchange of ideas. To reinforce cluster efforts, trade associations can fulfil the need to provide scale-sensitive functions. For example, flower cooperatives in Netherlands have upgraded by establishing specialised auctions. This facility has developed the Dutch flower cluster into a highly competitive unit. The Dutch Flower Council, in conjunction with the Association of Dutch Flower Growers Research Groups, is involved in other efforts such as applied research and marketing.

To understand how business and government together can create conditions of economic development, one has to appreciate the role of clusters in the promotion of growth. They offer a constructive way to change the nature of the relationship between the private and public sectors. Because of a good understanding of what constitutes competitiveness, business leaders can begin to ask the right questions. Porter (1998:88) gives an example of MassMEDIC, a medical-services cluster in Massachusetts. It successfully worked with the U.S. Food and Drug Administration to establish a mutually acceptable approval process of medical services. This move provided benefits for cluster members and contributed to strong competition among the stakeholders.

3.5 CONCLUSION

The theories of investment location highlight the factors which influence potential investors to locate in a particular region. These include transport and labour costs and agglomeration economies. There are other factors that determine choices of investment location. Porter's

Diamond framework plays a significant role in explaining how firms choose to invest in particular regions. It argues that the competitiveness of particular industries in a country forms an important basis for locational choice. The manner in which the four attributes of the Diamond complement one another to create an environment that enhances an industry-competitive advantage provides an insight for firms that enables them to make their locational decisions. The set of the locational theories can help the NMM in the development of its economic developmental strategies, particularly in making the region attractive to potential investors.

The theory of industrial policy entails active participation by government in promoting investment, trade, human resource and technology development, and creating a competitive industry structure. This theory has implications for the Metropole and it will be used in subsequent chapters, particularly Chapter 5, to highlight its relevance to the Metropole's industrial development.

The case studies on Silicon Valley and others which have been discussed in this chapter provide a sound basis on which to highlight the contribution of clusters to economic growth and development and thus in attracting investment. Firms which locate in close proximity develop linkages which help in the swift flow of information and contribute to enhanced innovation.

The next chapter will present the economic profile of the NMM and its potential for growth. The theories discussed in Chapters 2 and 3 will feature in organising the economic overview of the Metropole.

CHAPTER FOUR

ECONOMIC OVERVIEW OF THE NELSON MANDELA METROPOLE

4.1 INTRODUCTION

The NMM includes the city of Port Elizabeth and the adjacent towns of Uitenhage and Despatch. It is recognised as one of the major industrial centres in South Africa and is the major manufacturing hub of the Eastern Cape Province.

The Constitution of South Africa asserts that one of the objectives of a local government is to encourage economic development of its region. This policy should pay attention to the broader economy of the Metropole, employment and economic growth. Moreover, focus should be directed at identifying developmental areas and strategies in order to attract investment.

This study concerns the attraction of investment to the NMM. The previous chapters have indicated that a region's ability to attract investment depends on the productivity with which its resources are being used to create higher growth rates and competitive advantage. Productivity is the major determinant of the population's standard of living in the long run (Porter, 1998: 6). While high productivity provides high income growth rates, it also supports social standards, such as health and security, that improve the standards of living. It is therefore clear that the growth in income of citizens leads to the social development of the population.

This chapter seeks to develop an economic profile of the Nelson Mandela Metropole that provides an understanding of its economy. Section 4.2 deals with the international, national and provincial context in which the Metropole exists. This has a bearing on the responsibilities of local authorities. The Metropole is the leading industrial centre in the Eastern Cape Province. It is therefore necessary to look at it in the context of the challenges it faces in the region. Furthermore, the national government has devolved local development responsibilities to local governments (Province of the Eastern Cape Province, 2004: 11). Section 4.3 looks at the demographics of the Metropole. This is necessary in order to assess infrastructural challenges in the area and to formulate economic development strategies for these challenges. Section 4.4

discusses development indicators such as poverty incidence and education levels. This has a bearing on human resource development as well as using the "basic needs" approach as an economic development strategy. Section 4.5 considers labour market indicators in order to evaluate the contribution of the labour market to the local economy. Section 4.6 discusses the level of economic activity in the Metropole. This serves to obtain an insight into the strengths of various economic sectors, in order to enable policy formulation. In Section 4.7, service infrastructure in terms of sanitation, telephone services, energy and access to water, is discussed. Infrastructure is significant in creating competitive advantage. Section 4.8 evaluates recent investments in the Metropole. This indicates the attractiveness of the region to investors. Finally, Sections 4.9 and 4.10 consider spatial economic development and the conclusion respectively.

4.2 THE INTERNATIONAL, NATIONAL AND PROVINCIAL CONTEXT

4.2.4 International

The 1990s saw an increase in the globalisation of markets, which emphasised the provision of increased attention to the economic importance of the metropoles. Pakes and Nel (1997:5) suggest that they produce about 80% of the country's gross domestic product (GDP). It is therefore crucial to ensure that proper planning and efficient economic running of these areas are achieved in order to render them internationally competitive. Porter (1998:56) contends that the economic activities of each location, whether it be a metropolitan area, a region or a country, will prosper if it is supported by competitive advantage and enjoys a niche that is difficult to replicate elsewhere. This advantage results from unique local attributes that help to attract investment to these particular areas.

Since South Africa was reintegrated into the global economy in 1994, it has been faced with more challenges than it used to be prior to this period. Its integration into the global markets has been characterised by a process of selective trade liberalisation that has had a sizeable impact on various international economies, particularly those that were heavily protected through the presence of import tariffs. The Department of Trade and Industry (DTI) (2002:9) indicates that the liberalisation of trade has had different effects across economies. The Eastern Cape Province,

particularly the NMM, is largely affected by this process as it is the major manufacturing hub of the automotive industry. For example, light commercial vehicles imported from the European Union attract import duties of 34%, 32% and 30% in the years 2005, 2006 and 2007 respectively (DTI, 2002:9). It is important to note that the gradual reduction of the tariffs is occurring faster than the rate shown in South Africa's undertaking to the World Trade Organisation (WTO), which was a rate of 50% on complete built units (CBUs).

In response to new global challenges, the South African government initiated some macro- and microeconomic reforms. This occurred within the broader strategy to transform the economy to achieve socio-economic development. The parallelism of the macroeconomic reforms and the development of the metropoles are discussed in Section 4.2.2.

4.2.5 National

South Africa's economic performance in the late 1980s and early 1990s was constrained by both external pressures caused by the political and economic isolation of the country, and its continued structural deficiencies. During this period, industrial policies moved towards inward-looking import substitution and self-sufficiency. The new government had to bring the isolated South African economy back to the global economy (DTI, 2002: 8).

To address the challenges of a declining economy, a policy framework known as the Reconstruction and Development Programme (RDP) was proposed in 1994. According to the Province of the Eastern Cape (2004: 3), the RDP was aimed at integrating growth, development, reconstruction and redistribution into one programme. This would provide access to services such as electricity, clean water, telecommunications, education and health. The achievement of results in the RDP policy framework has shown slow progress. It was, therefore, suggested that although the RDP set the goals that would restructure the economy, it did not have the vision to provide the necessary infrastructure for the purpose (Nelson Mandela Metropolitan Municipality (NMMM) 2004: 3).

In June 1996, the government introduced the Growth, Employment and Redistribution Programme (GEAR), as a macroeconomic framework for South Africa. It is a medium-term

strategy aimed at establishing an integrated set of economic policies reflecting global practices. It sets out to achieve improved growth and employment performance, while strengthening the long-term competitive performance of the economy. GEAR emphasised a restrained fiscal policy with a national budget deficit of below 3% of GDP and a tight monetary policy with the inflation rate of below 10%, coupled with trade liberalisation. The target of growth rate in GEAR for the 1996-2000 period was 4,2% per annum (Edwards, 2003:17).

The impact of the GEAR strategy on the economy has attracted much debate. It was hoped that GEAR would meet its growth rate target of 4,2% per annum through private sector investment. This would be stimulated by low interest rates, which would emerge as a result of a reduced national budget deficit (Edwards, 2003:18). However, the GEAR targets were not met. The economic growth rate registered about 2,6% per annum during the 1996-2000 period, below the envisaged GEAR target of 4,2% per annum. According to Weeks (1999:499), the failure of GEAR to achieve the set target of growth was due largely to a reduced fiscal deficit. During the target period of GEAR, interest rates rose instead of falling. Thus, foreign direct investment (FDI) declined.

As a result of such problems, it is hard to assess the extent to which South Africa's economic performance is due to the GEAR strategy. Numerous other measures have been introduced to enhance the competitiveness of the economy. Such measures relate to a shift from demand-side policies, such as production tariffs, to supply-side measures, such as providing subsidies for exports and providing support to export-orientated industries. Subsidies on exports are aimed at encouraging firms to exploit economies of scale, and produce for export purposes. One of the strategies that encourages the use of subsidies to promote exports of manufactured goods is the Motor Industry Development Programme (MIDP), the details of which are given in Appendix One. This has been a key instrument in improving the performance of some sub-sectors such as autos, chemicals, radio and television, and communication equipment (DTI, 2002:12).

The government also proposed the introduction of a new competition policy, and sector-specific regulators were implemented. According to the DTI (2002:10), a new institutional framework came into being with the aim of supporting small and medium businesses. Included in this

approach is the undertaking of geographic intervention by DTI-related institutions to enhance investment and development in marginalised areas, through the use of spatial development initiatives (SDIs). Recently the government has added the Integrated Sustainable Rural Development Strategy and the Urban Renewal Programme to its stable of economic reforms, in order to deal with rural and urban economic deprivation. Appendix Two contains the details of the Motherwell Urban Renewal Project in Port Elizabeth.

The Province of the Eastern Cape (2004:4) notes that the current macroeconomic policy attracts some criticism. The most important one is that it focuses attention on macro-economic stabilisation instead of placing emphasis on social security and poverty alleviation.

4.2.6 Provincial

A Provincial Growth and Development Strategy (PGDS) was first introduced in 1996 as a framework for socio-economic transformation of the economy of the Eastern Cape. The Province of the Eastern Cape (2004:4) reveals that the PGDS, although it took its cue from the national policy framework, did not enjoy the required success owing to a deficient empirical understanding of the socio-economic environment of the Province. Based on the lessons experienced during the implementation period of the PGDS (1997-2001), the provincial government has proposed a new Provincial Growth and Development Plan (PGDP) 2004 to 2014, in July 2003.

According to Nelson Mandela Metropolitan Municipality (2004:4), the PGDP proposes to improve the quality of life of the citizens of the Province of the Eastern Cape. Three issues are key to the policy and strategy at provincial level:

- The impact of national policy strategies on the provincial economic development.
- The performance of provincial government in developing a policy and its implementation.
- The effect of the policy shift from provincial to local government as certain functions are transferred to it according to the constitution.

The shift of service delivery to local government requires an effort to reinforce the Integrated Development Planning process in municipalities. The focus of attention must be on factors such

as project management capabilities, sound financial management, ownership of this process by local communities, and creating partnerships between local government and civil society organisations in order to support the enhancement of livelihoods at the household level.

The provincial policy framework provides a context within which the competitiveness of the NMM can be analysed.

4.3 DEMOGRAPHICS

In demographic terms, the NMM is the fifth largest metropole in South Africa and the largest in the Eastern Cape (Christopher, 1999: 8). The Metropole has seen an exceptionally rapid population growth during the past century. Table 4.1 presents some demographic information on the Metropole.

Table 4.1: Population of the Nelson Mandela Metropole ('1000)

Year	African	Coloured	Indian	White	Total	Increase (p.a.)
1891	5 (17%)	8 (27%)	-	17 (57%)	30	
1911	10 (19%)	15 (28%)	1 (1%)	27 (51%)	53	2,9%
1921	15 (22%)	18 (26%)	1 (1%)	35 (51%)	69	2,7%
1936	27 (27%)	32 (24%)	3 (2%)	64 (47%)	135	4,6%
1951	88 (36%)	53 (22%)	5 (2%)	98 (40%)	244	4,0%
1960	146 (42%)	79 (23%)	5 (1%)	120 (34%)	350	4,1%
1970	202 (43%)	112 (24%)	5 (5%)	150 (32%)	469	3,0%
1980	307 (48%)	152 (24%)	7 (1%)	175 (27%)	641	3,2%
1991	441 (54%)	197 (24%)	9 (1%)	178 (22%)	826	2,3%
1996	683 (66%)	182 (18%)	10 (1%)	156 (15%)	1030	4,5%
2001	592 (59%)	236 (23%)	11 (1%)	166 (17%)	1005	-0,5%

Source: Christopher (1999:7) and Stats SA (2003).

The percentage composition of total population for each population group is shown in brackets in each group's column.

Of interest in the Table is the population growth rate per annum of the Metropole during the period 1891-1960. This period shows a rise from just over 2% per annum to more than 4% per annum. The share of the African group of the population has been growing at an enormous rate. In the period from 1891 to 1996, it has climbed from 17% to 66%. This growth rate can be attributed to a parallel economic growth rate of the region. The absorption rate of Africans can only have been due to employment opportunities, as the laws of the time such as the Influx Control Act would have prohibited any African influx on grounds other than employment.

The Coloured and Indian sections of the population remain at a small, steady growth rate, and maintain a steady proportion of the population at more than 20% and 1% respectively. The Whites' share has declined considerable over the years. This may be ascribed to other groups of the population becoming skilled in many of the jobs available, and replacing the white population.

The rapid increase of the Metropole's population has created a challenge to the local government to reinforce their efforts to provide basic services to the local community.

It is also useful to analyse the Metropole's population in terms of age groups. This will highlight the percentage of the population that constitutes the labour force. Furthermore, this type of analysis provides information for future planning of the Metropole. For example, with the greater percentage of the population being in the category of 16 years and younger would create expectations of a natural population growth in the Metropole. Table 4.2 shows various age groups of the population.

Table 4.2: Population by Age-Census 2001.

	% of Population		
Age group (years)	Nelson Mandela Metropole	Eastern Cape Province	National
0 – 4	7,7	10,2	9,9
5 – 14	18,5	26,6	22,1
15 – 34	37,2	33,2	36,9
35 – 64	31,3	23,7	26,1
65 and above	5,3	6,3	5,0
TOTAL	100	100	100

Source: Stats SA (2003:27).

The age group 15-34 years has the highest population contribution of 37,2% in the Metropole, while it has 33,2% in the Eastern Cape Province as a whole and 36,9% in South Africa as a whole. This group includes young working citizens who are beginning to be economically active and have a long future to become significant members of the labour force in the province, in jobs such as being teachers, clerks, nurses and other service-providing jobs. In contrast, the 35-64 age group shows a higher concentration in the Metropole (31.3%) than provincially (23.7%) and nationally (26.1%). One can speculate that the group constitutes the older citizens who settled in the urban areas before 1994 in search of work.

According to Thirlwall (2003:48), high rates of unemployment manifest in high growth rates of population. Factors such as high unemployment and population growth rates are dominant characteristics of developing countries. As stated earlier in this section, larger percentages of population in this category signal a natural future population growth in a particular location. It would therefore be sensible to argue that the high population percentages in the younger population category pose a huge challenge for development strategies in the area, and the NMM in particular.

Another aspect of the demography that warrants examination, is the distribution of the population by gender in the region. This will give an indication of the potential share of the workforce. Table 4.3 presents the gender distribution.

Table 4.3: Population by Sex – Census 2001.

	% of Population	
Gender	Nelson Mandela Metropole	Eastern Cape Province
Female	52,1	53,9
Male	47,9	46,1

Source: ECSECC (2005:8)

The Table shows that females form 52,1% of the NMM's population. The gender distribution of the population does not show significant differences between the Metropole and that of the Province. This can be ascribed to the demise of laws prohibiting permanent settlement of black families in urban areas. Once again, this trend confronts the Metropole with a challenge to step up its efforts to provide basic services. It also creates a situation where both spouses are work seekers.

4.4 DEVELOPMENT INDICATORS

4.4.1 Poverty incidence

Poverty can be defined broadly in terms of a lack of access to opportunities that provide a sustainable livelihood. These opportunities are characterised by income, skills, knowledge and access to decision-making (World Bank, 2000:198). Sen (1999:34) defines poverty in terms of the provision of entitlements that provide life sustenance and self-confidence.

The current socio-economic baseline of the Eastern Cape Province shows that poverty is widespread (Edwards, 2003:8). To measure poverty, a poverty line is defined, which is a per-capita income figure that is to provide a minimum acceptable level of consumption in order to separate the poor from the not so poor. In South Africa, the current per-

capita income that was used for poverty line purposes in 2003 was R1200 per month per household (Edwards, 2003:12). Any household that earned less than this figure was taken as suffering from poverty. In 1999, it was estimated that 67% of the population lived below the poverty line. During the same year, approximately 55% of the population of the Province was unemployed. Access to basic and social services was limited. Table 4.4 provides a breakdown of poverty levels in the Nelson Mandela Metropole.

Table 4.4: Poverty incidence in the Nelson Mandela Metropole.

Magisterial District	Persons living in poverty (number)	Persons living in poverty (% of population)	Poverty gap (R million)
Port Elizabeth	308,789	35,4	422
Uitenhage	91,338	42,7	129
Nelson Mandela Metropole	530,617	39,5	722

Source: ECSECC (2005: 3).

Note that the figures for Port Elizabeth and Uitenhage in column one do not add up to 530,617. This is because there are adjacent areas other than these two towns that are added to form the Metropole. The table shows that an additional income of R722 million is necessary in order to upgrade the income of persons who earn below the poverty line. Approximately 40% of households earn less than the poverty line. The depth of the poverty situation is worsened by the high unemployment rates (see labour market section below).

The percentage of households living in poverty is higher in Uitenhage than in Port Elizabeth. The levels of literacy and skills in these two areas may be contributing to the difference (ECSECC, 2005: 4) (see the Education levels section). The Uitenhage area has a 42,7% poverty rate, while the poverty level in Port Elizabeth is 35,4%. Interestingly, the poverty gap in Uitenhage (R129 million) is smaller than that in Port Elizabeth (R422 million). This can be explained in terms of demographic differences of the two areas. There are probably more households in Port Elizabeth that need to upgrade to above the poverty line than in Uitenhage.

4.4.3 Education levels

Another dimension of development in the region concerns the levels of education of the population. This has an important significance for the growth and development strategies. According to Thirlwall (2003:83), low standards of education and skills lead to regions being unable to develop new enterprises and absorb new technologies. Table 4.5 shows the rate of literacy in three regions: Nelson Mandela Metropole, Eastern Cape as a whole and South Africa as a whole.

Table 4.5: Highest level of education of over-20-year-olds – Census 2001. (% of over-20-year population)

Highest level of Education	Nelson Mandela Metropole	Eastern Cape Province as a whole	South Africa as a whole
No Schooling	6,8	22,8	17,9
Some Primary	13,0	19,8	16,0
Complete Primary	7,5	7,4	6,4
Some Secondary	39,6	29,6	30,8
Grade 12/ Standard 10	24,4	14,1	20,4
Higher Tertiary Education	8,7	6,3	8,5
Total	100	100	100

Source: Stats SA (2003:41).

Of importance in the Table is that the Metropole has a lower proportion of the population (6.8%) in the "no-schooling" category than both the whole the Eastern Cape Province (22.8%) and South Africa as a whole (17.9%). It has a higher share of the population in the "Standard 10" category (24.4%) than both the Eastern Cape Province as a whole (14.1%) and nationally (20.4%). There is a lower proportion of the population in the Metropole in the level of "Some Primary" schooling (13.0%) than both provincially (19.8%) and nationally (16.0%). There is a small difference in the statistics in the categories of complete primary and tertiary education for all three regions (Metropole, provincial and national). Again under the "Some Secondary" level, the table shows that the Metropole has a higher percentage contribution (39.6%) than the

province as a whole (29.6%) and South Africa as a whole (30.8%). Thus the Metropole has the highest percentage school enrolments compared to the province as a whole and the nation as a whole.

Research has shown that there is a strong correlation across nations between levels of education and skills, and economic performance (Lucas, 1988:3-24). This correlation was discussed in Chapter 2, where it was argued that sustainable economic growth results from development of new knowledge.

4.5 LABOUR MARKET INDICATORS

Underdeveloped areas normally have huge amounts of surplus labour. According to Nafziger (1997:247), poor countries are characterised by unemployment and so-called "disguised unemployment" in rural areas. The disguised unemployment results from the presence of surplus labour, where measures to combat the situation require that work be spread over many units of labour, with each unit of labour working a suboptimal day (Edwards, 1974:79). This phenomenon reduces productivity and therefore per-capita income. Furthermore, the surplus labour may migrate to the urban areas in search of work. When they do not find employment, they turn to the informal sector to make a living, by engaging in services such as street trading in haircutting, and transport businesses. These are low-productivity activities. This process of migration helps to transform rural disguised unemployment to open unemployment in urban areas. Table 4.6 presents the levels of unemployment in the NMM.

Table 4.6: Percentage of the Population in working age category (15-65) – Census 2001.

Labour Market Status	Nelson Mandela Metropole	Eastern Cape Province as a whole	South Africa as a whole
Employed	32,6	20,4	33,7
Unemployed	28,2	24,6	24,0
Not economically active	39,2	55,0	42,3
Total	100	100	100

Source: Stats SA (2003:51)

The table shows that the Metropole has a higher unemployment rate (28.2%) than both the province as a whole (24.6%) and South Africa as a whole (24.0%). The Eastern Cape Province has a higher percentage (55.0%) in the "not economically active" population than both the Metropole (39.2%) and the nation as a whole (42.3%). The employment rate of the Metropole (32.6%) is almost the same as that of South Africa as a whole (33.7%), but more than the province's (20.4%).

These statistics of unemployment represent a huge development challenge as poor countries have a much faster rate of population growth than developed countries (Thirlwall, 2003:79). Unemployment can be reduced by achieving an economic growth of at least 4% per annum (World Bank, 1995:39). There are not many economies that have the ability to grow at this rate. Research evidence across nations indicates that there is a strong correlation between rapid employment growth and pursuance of market-related policies combined with trade liberalisation. Furthermore, employment growth is strongly influenced by manufacturing export growth, which in turn is associated with the level of skills in each region (Thirlwall, 2003:79).

Another aspect of the labour market that needs examination is the issue of skills available in the region. Low levels of skills make people less prepared to adapt to change, and impede the ability

to develop enterprises (Galbraith, 1962:111). Table 4.7 provides details relating to skills levels in the Metropole.

Table 4.7: Skills Levels among population aged 15-65

Occupation	Nelson Mandela Metropole (%)	Eastern Cape Province (%)	South Africa (%)
Senior Management	6	4,3	5,4
Professional	12	6,6	7,0
Technical	9	12,6	9,6
Clerks	11	10,1	10,9
Service-related	10	9,8	10,1
Skilled	2	3,2	2,8
Craft & Trade	15	10,3	12,2
Plant & Machinery	10	7,3	8,8
Elementary	24	27,8	26,5
Undetermined	-	8,0	6,7
TOTAL	100	100	100

Source: ECSECC (2004: 5) and Stats SA (2003).

Column one of the table contains the percentage distribution of occupation in the NMM. This can be compared with the percentages of occupation distribution for the Eastern Cape and South Africa in columns two and three respectively. Column one shows a higher percentage in occupations of Senior Management, Professional, Clerks, and Craft & Trade than the Eastern Cape Province and South Africa. The elementary occupations show lower percentages in the Metropole than the other two regions.

It is important to indicate which sectors of the economy attract most of the labour force. The opportunities for work in the urban environment serve to attract those with low incomes from the rural villages. The prospect of earning higher wages in the urban areas is a motivation to migrate. The factors pose a strong challenge to the absorption capabilities of the urban employment sectors. Table 4.8 provides a breakdown of sectoral employment in the Metropole.

Table 4.8: Sectoral Employment Status among the population aged 15-65. Census 2001.

	Percentage of population		
Sector	Nelson Mandela Metropole	Eastern Cape Province	South Africa
Agriculture, hunting, forestry and fishing	9,6	9,5	10,0
Mining & quarrying	0,4	0,6	4,0
Manufacturing	12,0	12,0	12,6
Electricity, gas and water supply	0,5	0,5	0,7
Construction	5,8	4,9	5,4
Wholesale and retail trade	15,6	13,9	15,2
Transport, storage and communication	1,1	3,7	4,6
Financial, insurance and real estate	8,1	6,8	9,4
Community, social and personal services	26,9	26,0	19,2
Other and not adequately defined	0,1	0,1	0,2
Private households	11,8	11,8	9,8
Undetermined	8,1	10,2	8,9
TOTAL	100	100	100

Source: Stats SA (2003).

Table 4.8 shows that the community service sector is the largest employer at 26.9% of the population in the Metropole. The second-largest employer is wholesale and the retail trade at 15.6%. The manufacturing sector holds the third place at 12,0% of the population. However, in the Eastern Cape Province and South Africa, community services absorb most of the labour force at 26,0% and 19,2% respectively. Other sectors that perform significantly in the Eastern Cape and South Africa are manufacturing (12,0% and 12,6% respectively); agriculture, hunting, forestry and fishing (9,5% and 10,0% respectively); wholesale and retail trade (13,9% and 15,2% respectively); and financial, insurance and real estate (6,8% and 9,4% respectively). These

sectors are also performing strongly in the Metropole except the agriculture, hunting, forestry and fishing industry.

The figures indicate the potential of manufacturing and commerce as drivers of more employment and point to the need for policies to focus on them.

4.6 ECONOMIC ACTIVITY

There seems to have been a recovery in economic performance in the Eastern Cape in recent times. The years 2003 and 2004 have seen the Province being one of the fastest-growing ones in South Africa, with a GDP growth rate of 6,2% and 5,3% per annum respectively. South Africa's GDP recorded 3,5% and 2,8% per annum in 2003 and 2004 respectively (ECSECC, 2005:5). These are, however, nominal growth rates, and therefore do not reflect the real situation.

The NMM is the largest contributor to the provincial Gross Geographic Value Added (GGVA) of the Eastern Cape. ECSECC (2005:5) estimates the Metropole's GGVA contribution to the province at 41.3% per annum. Hosking and Lloyd (1999:23) suggest that the Metropole contributes approximately 44.1% per annum towards the GGVA of the Eastern Cape Province. This discrepancy may be ascribed to the effects of business cycles, which are periodic fluctuations in the GGVA levels. The reliable indicators of the business cycle are the GDP on a national level and the GGVA on a provincial level. Other economic indicators can be consulted to interpret economic behaviour. These include the unemployment rate, imports and exports, retail sales, inflation, new car sales, and the residential property market. These variables either change concurrently with phases of the business or move before the phases. The former are referred to as "coinciding variables", while the latter are known as "leading indicators". Table 4.9 provides a list of relevant economic indicators.

Table 4.9: Coinciding and Leading Economic Indicators.

Leading indicators	Coincident indicators	Lagging indicators
Net gold and other foreign reserves	Registered unemployed (inversed scale)	Employment in the non-agricultural sectors
Gold ore milled	Real GDP (excluding agriculture)	Hours worked in construction
Physical volume of mining production (excluding gold)	Physical Volume of manufacturing production	Wholesale sales of metals, machinery and equipment
Number of new motor cars sold	Real retail sales	Number of commercial vehicles sold
Real merchandise exports (excluding gold)	Real merchandise imports	Real investment in machinery and equipment
Net new companies registered	Utilisation of capacity in manufacturing	Unit labour costs in manufacturing

Source: Mohr (1998:74)

Most of the variables listed in Table 4.9 will be discussed later in this section, to create an understanding of economic activity in the NMM. There may be a lack of information in respect of some of them, in which case it will serve no purpose to include them.

4.6.1 Gross Geographic Value Added (GGVA)

As indicated earlier in this section, the gross domestic product (GDP) accounts for the entire value of production in respect of goods and services in the country's economy, while the gross geographic value added (GGVA) considers the total value of goods and services produced on a regional level of a country. Thus, the value of goods and services produced in the Nelson Mandela Metropole will be referred to as GGVA. Other than erratic fluctuations, a fall in the growth rate per annum (p.a.) of GGVA normally indicates the setting in of a recession, while a

rise in the growth rate usually suggests the beginning of an upswing in the business cycle. The GGVA is a coinciding variable and thus moves with the business cycle (see Table 4.9).

The trend in the GGVA of the NMM economy is shown in Table 4.10, which gives a picture of the annual growth rates of GGVA for the period 1999-2004.

Table 4.10: Gross Geographic Value Added (GGVA) for the Nelson Mandela Metropole, 1998-2004 (Constant 2000 Prices) (R'000)

	GGVA (R millions)	GDP (R millions)	Annual growth rate (%)	
Year	NM Metropole	South Africa	NM Metropole	South Africa
1998	22,650,337	781,829,000	1,5	0,7
1999	23,417,829	802,707,000	3,4	2,7
2000	25,733,025	838,224,000	9,9	4,4
2001	26,509,334	928,215,602	3,0	2,9
2002	26,815,090	1,134,585,900	1,2	3,6
2003	26,967,502	1,134,585,900	0,6	2,9
2004	27,850,604	1,230,409,307	3,3	3,8

Source: ECSECC (2005: 11).

The NMM's GGVA shows a steady growth during the period 1998-2000 from 1.5% p.a. to 9.9% p.a. before it registered a decline in the period 2001-2003 from 9.9% per annum to 0.6% p.a.

It is useful to explore the relationship between the trend of economic performance in South Africa as a whole and the NMM. Since 1998, the real growth rate p.a. in the NMM has been higher on a consistent basis than in South Africa as a whole. Growth in South Africa seems to have been rising from year 1999. In contrast, the NMM economy experienced a slowdown for the period 2001-2003.

When looking at the economy of a region, it is important to also analyse it by sectors. The sectoral analysis examines the GGVA influence on the employment structure, as different sectors

use production techniques that require varying labour intensities. The sectoral breakdown of GGVA of the NMM is presented in Table 4.11.

Table 4.11: Percentage Contribution by Economic Sector in the NMM, 1998-2004.

Year	Agric.	Mining	Manuf.	Electr.	Contr.	Trade	Transport	Finance	Services
1998	0,7	1,1	32,0	1,8	3,0	13,0	11,3	14,0	23,1
1999	0,1	0,1	32,0	2,0	2,9	12,7	11,9	14,8	23,5
2000	0,1	0,1	32,8	2,0	2,7	12,9	12,3	15,1	22,0
2001	0,1	0,1	32,9	2,0	2,8	12,9	12,7	15,2	21,3
2002	0,1	0,1	32,6	2,0	2,7	13,0	13,1	15,3	21,1
2003	0,1	0,1	32,6	2,0	2,6	12,8	13,2	15,5	21,1
2004	0,1	0,1	32,3	2,0	2,6	12,9	13,1	15,4	21,5

Source: ECSECC (2005: 10).

Table 4.11 shows that the manufacturing sector is the major contributor to the Metropole's GGVA, and its contribution has been steady at approximately 32.0%. Most of the sectors registered declining performances during the period shown in the Table. For example, the agricultural sector's contribution was 0.7% in 1998 and it went down to 0.1% in the subsequent years 1999-2004. Similarly, the mining sector's contribution to the Metropole declined from 1,1% to 0.1% in the years 1999-2004. The services sector has also been sliding slightly down in its relative share. It contributed 23,1% to the Metropole's GGVA in 1998, which reduced to 21,5% in 2004. Other sectors such as Transport and Finance experienced some slight improvement. The transport sector grew its contribution from 11.3% p.a. to 13.1% from 1998-2004, while the finance sector went up from 14.0% to 15.4% during 1998-2004. The growth in the contribution of the transport and finance sectors compensated for the reduced performance in the agricultural and mining sectors.

4.6.2 Economic Growth

The broad sectoral economic growth of the NMM is shown in Table 4.12.

Table 4.12: Growth Rates per annum by sector in the NMM: Real GDP%.

Sector	1998	1999	2000	2001	2002	2003	2004
Agriculture	-5,4	4,6	6,9	-1,0	3,9	4,2	4,5
Mining	7,9	3,1	5,5	-8,3	-16,3	-14,1	13,2
Manufacturing	-2,3	3,2	12,3	3,2	1,3	1,1	0,9
Electricity	1,8	5,5	8,8	3,3	-0,8	-0,7	-0,4
Construction		-1,1	4,3	4,2	0,2	0,17	0,11
Trade	-0,9	1,3	11,0	2,6	3,2	4,0	4,2
Transport	0,6	9,8	12,8	6,0	5,4	5,1	4,7
Finance	5,0	9,8	12,0	3,5	2,6	2,3	2,1
Services	0,1	0,05	0,2	0,4	1,1	1,3	1,5

Source: ECSECC (2005: 8).

The economic growth trend over the past seven years in the NMM shows a rise in the years 1999-2000 in almost all the sectors. Manufacturing, which is the largest contributor to the Metropole's GGVA, has been showing some decline from the year 2001. It would seem that the Metropole's manufacturing sector is not stable. Even Pakes and Nel (1997: 20) reported a decline in this sector in the period 1980-1992 and then a rise in the years 1999-1994. They speculated that the reversal from a decline to a rise in growth of this sector was due to positive expectations around the Coega Development Project. Another sector that shows high growth-rate fluctuations is mining. After a fair growth rate of 7.9% in 1998, the growth rate in this sector fell to 3.1% in 1999 and then rose to 5,5% in 2000. The predominant activities in this sector in the Metropole include quarrying, whose business cycle is largely dependent on the construction sector's performance.

Almost all the economic sectors in the NMM experienced a decline in their growth rates from 2001. However, the trade, transport and finance sectors, including the agriculture sector, recorded good positive growth rates, although these growth rates were declining. A parallel can be drawn between the decline in growth rates and the unemployment rates in the Metropole (see Tables 4.6 and 4.12).

Earlier studies have suggested some areas of potential growth in the Metropole. Pakes and Nel (1997:21) have indicated that the NMM has a comparative advantage over other areas in the Eastern Cape Province and in South Africa in terms of being a host location to the automotive industry. This sub-sector is the major performer in the manufacturing sector of this area. The Metropole is also a major producer of hides and skins, and because of the strong backward and forward linkages in agricultural and footwear sectors, this type of production is becoming significant in this region.

Another study by the Strategic Facilitation Group (1993:31) suggested the possibility that the food sector, including citrus oils, ice cream, and compound edible oils, the paper industry, the tobacco sub-sector and wooden products for furnishing, should be examined for export purposes. It is critical to establish whether this recommendation was taken up and what type of innovative activities are being engaged in, in order to sustain growth rates in the region, particularly in the manufacturing and services sector, which are the backbone of the local economy.

4.6.3 Inflation

The rates of inflation as measured by the Consumer Price Index in South Africa as a whole and in the NMM are shown in Table 4.13.

TABLE 4.13: Consumer Price Index – All Items1999-2004, % increase p.a.

Year	RSA %	NMM %
1999	5.2	4.5
2000	5.4	4.6
2001	5.7	4.9
2002	9.2	9.8
2003	5.8	4.7
2004	1.4	1.3

Source: Reserve Bank Quarterly Bulletin (2005)

Table 4.13 shows that the Metropole's inflation rate has been slightly below that of South Africa for the period 1999-2004. Inflation both in South Africa as a whole and in the NMM has been

rising in the years 1999-2002. However, the period 2002-2004 shows a downward trend of inflation. This bodes well for maintaining the purchasing power of the currency and enhancing the confidence of potential investors in the area.

The Reserve Bank has remained committed to its goal to keep the national inflation rate low. This is consistent with the country's policy of reintegrating its economy to the global economic network. Low inflation rates can enable the economy to become competitive internationally. Furthermore, it would be easy for the Reserve Bank to keep interest rates low, in terms of which the country would be able to attract private investment (Porter, 1998:21).

4.6.4 Number of registered businesses

The Port Elizabeth Regional Chamber of Commerce and Industry (PERCCI) (2005:28) reveals that the total number of registered businesses in the NMM in August 2004 was 17,257. The corresponding number in October 2003 was 16,936, while in October 2002, it was 16,155. These figures show a fair growth of 1.9% in the Metropole's registered businesses during 2004. 1,855 of these are in the business services sector, such as dry cleaners and electrical, while 1,638 are retail businesses. The category with the third largest number of registered businesses is the Letting companies sector with 1,262 outlets, while there are 1,134 businesses in the catering industry such as cafés, restaurants and home industry. The rest of the categories have less than one thousand registered businesses. More details on the breakdown of types of registered businesses in the NMM are provided in Appendix Three, including a list of top companies based on employee strength. This gives an indication of the sectors that attract a larger share of investment in the Metropole.

4.6.5 Import and export indicators

The growth of imports and exports as registered at the Port Elizabeth Harbour showed some negative growth during the period April 2003 to March 2004 (National Ports Authority, 2005:12). The cargo that goes through the harbour can be divided into bulk cargo, break bulk and containerised cargo. Bulk cargo is loose cargo in bulk that consists of only one product. Break bulk is general cargo that is not containerised, such as fruit and paper rolls. The handling of containerised cargo was 92% of total imports during the period April 2000 to March 2001, while

April 2001 to March 2002 saw 60.5% containerised cargo of total imports being handled in this harbour. During this period, imports of motor cars formed 34% of the total imports.

The exports that were handled through the Port Elizabeth Harbour were dominated by manganese ore. This product formed 49% of the total exports. However, the 2000/2001 period saw 51% of the total exports being manganese ore. It is therefore clear that the share of manganese ore of total exports handled in the Port Elizabeth Harbour fell from 51% in the 2000/2001 period to 49% during 2001/2002 (National Ports Authority, 2005:13).

According to Hosking and Lloyd (1999:28), the Port Elizabeth Harbour is a significant link in the automotive industry in terms of international trade. The harbour handles large volumes of exports for the automotive industry. The year 2005 registered the automotive exports through this harbour as having the second largest percentage (19%) share of exports behind manganese ore. This augurs well for the region's economic growth as it reflects export capabilities of the region. Section 2.7.1 revealed that export capabilities could be measured by data on manufactured goods. The miraculous economic growth of the East Asian countries is abscribed to high export performance of manufactured goods (Section 2.7)

The periods 2002/2003 and 2003/2004 have witnessed a decline in containers handled at the Port Elizabeth Harbour. Much of the cargo (52%) was bulk during the 2002/2003 period, while 21% was break bulk and 27% constituted containerised cargo. However, the usage of cargo handling methods has shown some variations. For example, in the 2003/2004 period, the bulk cargo handled at the harbour was 77% of total cargo, while the break bulk was 16% of total cargo, and containerised cargo was 7% (National Ports Authority, 2005:13).

The total volume of cargo handled has been increasing over the years discussed above. For example, the harbour handled a volume of 205,000 teu's (Twenty-foot Equivalent Units) per annum in the 2000/2001 period, while this volume increased to 261,00 teu's per annum during the 2001/2002 period (National Ports Authority, 2005:13).

4.6.6 Property market

The NMM keeps records of the number of house transfers in its jurisdiction on a weekly basis. Table 4.14 presents statistics over a period of twelve months ending April 2004.

Table 4.14: Residential Property Price Indicator.

Period	Gross rand sales	Number of units	Average selling price (in rands)
May 2003	117 928 351	706	167 037
June	181 387 305	1136	159 671
July	29 664 012	127	233 574
August	432 198 622	472	915675
September	385 751 913	806	478600
October	263 592 614	1036	254433
November	430 109 622	891	482726
December	89 296 077	370	241340
January 2004	400 803 326	447	896651
February	204 389 490	359	569330
March	323 994 317	583	555736
April	325 306 693	627	518830

Source: Nelson Mandela Metropolitan Municipality (2004).

According to Table 4.14, the month with the highest number of houses sold was June 2003. However, the highest gross rand sales were achieved in the month of August 2003, which was R432,198,622, with an average selling price of R167,037. According to the details of these seller-buyer transactions, there are two factors which contribute to variations in the monthly gross house values. First, the details reveal that the increase in house gross values is linked to the type of suburb where most transactions occurred. For example, if in a particular month most houses were sold in Summerstrand (a fairly expensive area), the total value of sales will be high. Second, the increase in house prices has made a big difference in gross value of sales.

The table also indicates that the average number of houses sold each month is almost the same. However, the monthly gross value of sales shows some significant differences. There are only two instances where total sales of houses passed the 1,000 mark. Those are the months of June and October, 2003. Statistics show that the property market in the NMM is vibrant when considering the number of house units sold. This has been attributed to some extent to the economic impact of the Coega Development Project.

4.6.7 New Vehicle Sales

There are three motor manufacturers in the Eastern Cape Province. Volkswagen SA (VWSA), General Motors SA (GMSA), and Daimler Chrysler. The first two operate in Uitenhage and Port Elizabeth respectively, and the third one has its plant in East London. Table 4.15 gives a breakdown of new vehicle sales in the NMM.

TABLE 4.15: New Vehicle Sales – Nelson Mandela Metropole 2002-2004 Period

	Period	Passenger Cars	Light Commercial	Medium Commercial	Heavy Commercial	Total Vehicles
National Totals	2002	270 238	104 747	5 720	2 576	383 281
	2003	247 256	104 884	6 372	3 099	361 611
	2004	301 151	127 629	8 636	3 721	441 137
Sales by:						
General Motors SA	2002	17 101	20 236	641	605	38 583
	2003	20 231	18 306	729	536	39 802
	2004	28 922	23 920	851	861	54 554
Volkswagen SA	2002	53 234	2 782	-	-	56 016
	2003	57 323	848	29	-	58 200
	2004	70 886	1 026	523	-	72 435
Share in national totals (%)						
General Motors SA	2002	6,3	19,3	11,2	23,5	10,1
	2003	8,2	17,5	11,4	17,3	11,0
	2004	9,6	18,7	9,9	23,1	12,4
Volkswagen SA	2002	19,7	37,	-	-	14,6
	2003	23,2	0,8	0,5	-	16,1
	2004	23,5	0,8	6,1	-	16,4
Metropole's Share	2002	26,0	22,0	11,2	23,5	24,7
	2003	31,4	18,3	11,9	17,3	27,1
	2004	33,1	19,5	16,0	23,1	28,8

Source: Response Group Trendline (2005)

Note: Totals include exports.

Table 4.15 presents data that shows the performance of the Metropole's two vehicle manufacturers – General Motors SA and Volkswagen SA. It reflects the share these two enterprises command of the total national vehicle sales as categorised under passenger cars, light, medium and heavy commercial vehicles during the years 2002, 2003 and 2004.

Volkswagen SA captured the largest share of 19.7%, 23.2% and 23.5% in the years 2002, 2003 and 2004 respectively, in the passenger vehicle class. Also of importance is that this showed an upward trend from 19.7% to 23.5% during the period. Even in the entire South African vehicle market, Volkswagen has a larger share than its rival (see total vehicles column).

However, General Motors SA dominates in the three categories of light, medium and heavy commercial vehicles. It is important to note that General Motors SA's figures also show an upward trend during the period 2002-2004. This augurs well to create a keen rivalry between these two organisations in the region (Porter, 1998:149).

The performance of the combined two manufacturers gives the Metropole a fair share of the national vehicle market. The Metropole's average share in the period 2002-2004 amounts to 26.9%. Of significance is that the trend has been rising during this period from a share of 24.7% for the Metropole in 2002 to 28.8% in 2004. This shows the commitment of the automotive industry in the region to respond to the challenges of being the major contributor to the region's output (ECSECC, 2005:11).

4.7 SERVICE INFRASTRUCTURE

4.7.1 Sanitation

Another aspect of critical importance in economic development is the concept of service infrastructure that includes the provisioning of clean water, electricity, sanitation and telephone services to the residents of the NMM. The provision of these services, including sufficient nutrition, began to be included in development strategies in the 1970s and is known as "the basic needs approach to economic development" (Singh, 1979:69). The reasoning behind this approach was that the direct provision of such services had the likelihood of reducing absolute

poverty sooner than alternative approaches that would merely attempt to raise growth rates and rely on raising incomes of the poor. It was argued that it might take a longer period of time to raise the incomes of the poor in order for them to afford basic needs. Table 4.16 presents a breakdown of toilet facilities in the Metropole.

Table 4.16: Distribution of households by toilet facility (Census 2001).

Type of toilet	Nelson Mandela Metropole (%)	Eastern Cape Province (%)	South Africa (%)
Flush toilet (connected to sewerage system)	77,4	30,6	49
Flush toilet (with septic tank)	2,1	2,2	2,8
Chemical toilet	0,1	2,0	1,9
Pit latrine with ventilation	0,4	5,6	5,7
Pit latrine without ventilation	2,2	23,2	22,8
Bucket latrine	13,6	5,6	4,1
None	4,2	30,8	13,6
TOTAL	100	100	100

Source: Stats SA (2003: 91).

The access to flushing toilets shows a relatively high percentage of 79.5% of total households in the Metropole with toilet facilities, excluding all collective living quarters. This refers to flush toilet facilities connected to sewerage, including flush toilets with septic tanks. The Metropole's position in this category shows a higher level of sanitation than the Eastern Cape Province as a whole (32.8 %) and South Africa as a whole (51.9%). The availability of pit latrine toilet facilities with and without ventilation seems to be higher in the whole of the Eastern Cape Province (28.8%) and the whole of South Africa (28.5%) than the Metropole (2.6%) as reflected in the table. However, the NMM still has a higher percentage of households using the bucket system of toilet facilities (13.6%) than the percentage of households in the Eastern Cape as a whole (5.6%) and the whole of South Africa (4.1%). Again the national and provincial

percentage of households without toilet facilities (13.6% and 30.8% respectively) are far higher than the Metropole's 4.2%.

The discrepancy in the provision of toilet facilities between the Metropole, South Africa and the Eastern Cape Province may be attributed to the fact that most households of the Metropole fall into the urban arrangement, while the national and provincial toilet system is mixed with a great percentage of rural area.

As mentioned earlier in this chapter, the urban areas are faced with a challenge to absorb a great percentage of rural population that migrate to towns in search of employment. Although the Metropole shows a lead in the category of flush toilet facilities, it is lagging in the rate of reducing the use of the bucket toilet system. The access to healthy toilet facilities will be critical for the Metropole when it develops strategies for the housing of its ever-growing population.

4.7.5 Telephone services

Table 4.17 provides an insight into access to the Metropole's telephone network. The telephone network forms part of the communication infrastructure that enables the residents to integrate into the community mainstream. This reinforces the support systems that facilitate the provision of basic needs such as health and education services, such as engaging the ambulance services in emergencies and improving learning conditions for the children.

Table 4.17: Telephones in Dwellings and/or Cellphones (% Households) (Census 2001).

Telephone facility	Nelson Mandela Metropole	Eastern Cape Province	National
Telephone in dwelling and cellphone	20,1	7,7	14,2
Telephone in dwelling only*	20,2	7,7	10,2
Cellphone only*	11,6	13,6	18,0
At a neighbour nearby	8,4	10,2	6,5
At a public telephone nearby	34,9	35,3	38,5
At another location nearby	1,6	5,3	3,2
At another location, not nearby	0,8	7,2	3,4
No access to a telephone	2,4	13,0	6,0
TOTAL	100	100	100

Note: The total percentage households with a telephone in the dwelling can be found by adding the data in rows one and two (20.1% + 20.2% = 40.3%). The total percentage of households with a cell-phone is obtained by adding the data in rows one and three (20.1% + 11.6% = 31.7%).
Source: Stats SA (2003:87).
This Table excludes all collective living quarters.

The percentage of households having access to cell-phones is 31.7% in the Metropole, 21.3% in the Eastern Cape Province as a whole and 32.2% nationally. The access to a telephone at a nearby neighbour and at a public telephone nearby shows a slight difference between the three areas combined in the data in Columns one, two and three. However, there is lower percentage of households in the Metropole that have access to a telephone at another nearby location, another location not nearby, and that have no access to a telephone at all (1.6%, 0.8% and 2.4% respectively) than provincially (5.3%, 7.2% and 13.0% respectively) and nationally (3.2%, 3.4% and 6.0% respectively).

Again the Metropole has a better provisioning of telephone facilities to its residents compared to the provincial and national figures. The cause of the discrepancy may be based on the fact that the province and the country have vast areas that are rural.

4.7.6 Energy

Energy for cooking and lighting is another area of development that needs analysis. Table 4.18 presents a breakdown of access to energy or fuel for consumption.

Table 4.18: Dominant Energy for Cooking and Lighting (% Households) – Census 2001.

	Nelson Mandela Metropole			Eastern Cape Province			National	
Energy Source	Lighting	Cooking		Lighting	Cooking		Lighting	Cooking
Electricity	75,0	65,0		49,6	27.8		66.7	51,4
Gas	0,4	1,6		0,3	2,9		0,2	2,5
Paraffin	22,5	31,6		23,5	29,4		6,8	21,4
Wood	N/A	0,9		N/A	35,9		N/A	20,5
Coal	N/A	0,3		N/A	0,3		N/A	2,8
Animal dung	N/A	0,3		N/A	3,3		N/A	1,0
Solar	0,1	0,2		0,3	0,1		3,3	0,2
Candles	1,9	N/A		25,9	N/A		22,7	N/A
Other	0,1	0,1		0,4	0,3		0,3	0,2
TOTAL	100	100		100	100		100	100

Source: Stats SA (2003: 81).

The figures on the Table exclude all collective living quarters. The table shows that the use of electricity for both lighting and cooking is utilised by a higher percentage of households in the Metropole (75.0% and 65.0% respectively) than both provincially (49.6% and 27.8% respectively) and nationally (66.7% and 51.4% respectively). More wood is being used as a source of energy for cooking in the province and nationally (35.9% of households and 20.5% of households respectively) than in the Metropole (0.9% of households). Paraffin usage for both lighting and cooking is less in South Africa as a whole (6.8% of households and 21.4% of households respectively) than in the Metropole and the Eastern Cape Province, which shows a similar pattern of usage of this energy source. The levels of usage in energy sources such as coal,

animal dung and solar, seem to be similar in the Metropole, provincially and South Africa. However, candles are less utilised for lighting in the Metropole (1.9% of households) than provincially (25.9% and 22.7% respectively). The trend in usage of all these energy sources reflects the composition of areas as urban or rural.

4.7.7 Access to water

Access to clean water has become a critical factor in the provision of basic needs, particularly in the poor regions of the world. This is due partly to rapid population growth in these regions and the changing conditions in the environment. The world population has increased by 120% since the 1950s (Dyson, 1996:113). The World Development Report (2000/2001) estimates that 70% of the South African population has access to safe water and sanitation. The lack of access to basic health facilities, including access to safe water, is reflected in the rate of infant mortality in poor countries, which is 68 per 1,000 live births compared with only 6 per 1,000 in developed countries. Dyson (1996:14) concludes that the productivity of food production with existing technology, including production of clean water, is far below its potential in many countries, particularly in Africa. Table 4.19 shows the extent of access to water in the NMM.

Table 4.19: Access to Piped Water (% Households) – Census 2001.

Main Water Supply	Nelson Mandela Metropole	Buffalo City (East London)	South Africa
Piped water to the Dwelling	47,2	32,2	33,3
Piped water inside yard	33,4	28,1	30,0
Piped water to Community stand <200m	9,1	19,5	11,0
Piped water to Community stand >200m	10,0	16,1	12,9
Borehole	0,07	0,3	2,6
Spring	0,03	0.1	1,9
Rain-water tank	0,1	0,6	0,6
Dam/pool/stagnant water	0,07	1,9	1,0
River/stream	0,03	1,2	6,7
TOTAL	100	100	100

Source: Stats SA (2003: 83).

The Table excludes all collective living quarters. The Metropole has a higher percentage of households using piped water to the dwelling (47.2%) than both Buffalo City (East London) (32.2%) and South Africa as a whole (33.3%). It uses less of piped water available to the community within 200 metres walking distance (9.1% of households) than both South Africa (11.0% of households) and Buffalo City (19.5% of households). Similarly, it has less percentage households that use communal water available in more than the walking distance of 200 metres than both Buffalo City (16.1%) and South Africa (12.9%). Other categories of water provision such as piped water inside yard, borehole, spring, rain-water tank and dam/pool/stagnant water do not show significant percentage of household differences in their usage in the three areas

compared in the table. However, river/ stream water has a higher percentage of household usage in South Africa (6.7%) than both the Metropole (0.03%) and Buffalo City (1.2%). Buffalo City has a bigger rural component than the NMM. This could point to its households using more traditional methods of accessing water.

4.8 INVESTMENT TRENDS

According to the Industrial Development Corporation (1996:21), empirical evidence confirms the theory that advocates investment as an instrument to achieve and sustain competitiveness. It is estimated that foreign direct investment (FDI), which has reached the shores of South Africa since 1994, was attracted mainly by the manufacturing sector (Pakes and Nel, 1997:21).

The NMM is the largest contributor to the GGVA of the Eastern Cape Province. Its economy is characterised by the presence of a strong automotive industry that is seen as the backbone of the local economy. During the period of economic isolation of South Africa because of its apartheid policies, the region experienced economic stagnation, as very little new FDI reached it (Horn, 2003:2). With the globalisation of the South African markets, the Metropole's motor car industry was one of the local industries to receive a boost through investment. The two major motor assembly plants in the Metropole, GMSA and VWSA, welcomed the opportunity by investing extensively in production expansion.

The NMM has shown a strong growing economy in recent years. According to the Port Elizabeth Regional Chamber of Commerce and Industry (PERCCI) (2005: 20), the local business confidence index shows that in the year 2004, the Metropole experienced considerable growth in consumer confidence. The local economy's strength is reflected in the number of investments the companies are willing to commit. Some of the other major investments that have taken place in the Metropole in 2004 are shown in Table 4.20.

Table 4.20: Recent Investments in the Nelson Mandela Metropole.

Nelson Mandela Metropole - 2004		South Africa
Automotive and Components	R'm	FDI Transactions 2001
General Motors SA Volkswagen SA Kromberg & Schubert Shatterprufe Moro Levi Manufacturing SA Borbet SA AK Stone Guards Continental Cars Hella Behr Climate Control (Pty) Ltd Murray and Roberts Aluminium Casting Alucast Plant Total	1,800 990 90 43 40 40 28 15 4.7 5 26 3081.7	1. Saudi Arabian company Saudi Oger planned to invest over R3bn (third cellular licence). 2. Italian group Cirio acquired Del Monte Foods R1.333bn. 3. Malaysian Resources Corporation Berhad – property development R1.3bn. 4. China Building Material Industrial Corporation R1,154.2bn. 5. Toyota Japan increased its stake in Toyota SA R415m. 6. Global Environment Fund purchased Mondi assets to start Global Forest Products R1.068bn. Total R1,161.316bn
Others		Domestic investments from 2001 onwards
Walker Drive Complex Ziyabuya Shopping Complex Walmer Park Pick 'n Pay Uitenhage Provincial Hospital	65 56 53 6 100	1. Spoornet R15bn. 2. Amplats Platinum R12.6bn 3. Dept of Water & Forestry – Thukela-Vaal transfer scheme R4.5bn 4. Taxi recapitalisation programme R4bn 5. Anglo Gold and Gold Fields R4bn 6. Monex Developments Century City R3bn

Netcare Greenacres Hospital	25	7. Johannesburg upgrade Alexandria	R3bn
Healthcare	4.5	8. Capricorn Research Park	R3bn
		9. Metrol Rail	R2.8bn
		10. N3 Toll Road	R2.5bn
Total	309.5	Total	R54.4bn

Source: PERCCI (2005: 30-32) and Business Map (2001: 23-24).

Business Map (2001:23) claims that the inflow of FDI into South Africa was more successful in 2001 than in 2000. It would seem that more opportunities were created for these investments. For example, the cellular licence bid presented a once-off large investment, and of course some subsequent upgrading of the products also presented investment opportunities.

The strength of the NMM's economy can often be measured by the number of companies that commit investments in the area. In this sense, 2004 experienced a strong growing economy in the Metropole. Table 4.20 lists some of the significant investments which serve as an indication as to the kind of investment activity the area experiences.

The automotive and components sectors have displayed confidence in the local economy through several investments. A sizable investment of R1.8 million was made by General Motors. According to PERCCI (2005:23), this company has become the leading South African exporter of vehicles to right-hand-drive markets in Southern Africa. Volkswagen South Africa also had a significant investment of R990 million during the 2004 period. These investments were supported by others from component firms such as Shatterprufe (R43 million) and R90 million from Kromberg and Schubert, to mention a few in the Table.

On the retail sector and others, some notable investments are worth mentioning. Shopping centres such as Walker Drive Complex (R65 million), and Ziyabuya Shopping Complex in Kwadwesi (R56 million) have been new additions to the number of shopping centres in the area. Walmer Park (R53 million) and Pick 'n Pay (R6 million) shopping centres have shown their confidence in this local economy through making extensions to their existing establishments. Some investments by Uitenhage Provincial Hospital (R100 million), Netcare Greenacres

Hospital (R25 million) and Healthcare (R4.5 million) have helped to upgrade the infrastructure of a growing economy.

4.9 SPATIAL ECONOMIC DEVELOPMENT

The NMM has an ever-growing retail sector, which includes several upmarket shopping malls and major wholesalers. The retail sales at constant prices (2000) were reported to have had a growth of 10.3% in the three months to August 2004, compared to the same period in 2003. The period of January to August 2004 saw a 9.4% growth in retail sales, compared to the same period in 2003 (PERCCI, 2005:58).

The development of Port of Ngqura (deep-water port) has two interrelated components: the deep-water port on the Coega River, (the Port of Ngqura), and the Coega Industrial Development Zone (IDZ). Construction of the first phase of this development has reached its half-way mark and was scheduled to be in use by October 2005. The port will have a container terminal and facilities for handling dry and liquid bulk materials. The government is funding the development through the Coega Development Corporation (CDC). The CDC has sought to obtain various investments from different sectors instead of looking at a single anchor investor. This approach has resulted in potential investors in metal manufacturing, metallurgical, electronics, automotive, logistics and food processing industries showing some interest in the project (PERCCI, 2005:68).

The industrial position of South Africa now places great emphasis on international competitiveness of selected industries. This approach has resulted in this policy to encourage the clustering of industries in order for them to benefit from competitive advantage. This new trend in organising industries to be internationally competitive forms a criterion for the positioning of IDZs in suitable locations in the country. Port Elizabeth was selected to be a site for the Coega IDZ. Table 4.21 provides a comparison of Port Elizabeth (PE) to other industrial centres in the country for their suitability to be host locations for IDZs.

TABLE 4.21: Location suitably of South African IDZs for Globally-Linked Markets

Key factors	Weight	C.T.	Dbn	PE	EL	R. Bay	Sldna	Jhb	Pta	Vaal
International Transport	0,95	9	9	7,5	6,5	7,5	6,5	8	8	8
Transport Costs	-0,6	-	-	-	-	-	-	7	7	7
Available Skills	0,8	9	9	7	7	6	6	9	8	8
Available Sites	0,75	9	8	8	8	8	8	8	8	8
Diseconomies of Site	-0,65	7,5	8	6	6	4,5	4,5	8,5	8	8
Services	0,85	9	8,5	7,5	6,5	6,5	6	8,5	8	8
Infrastructure	0,85	8,5	8,5	8	8	7	6	8,5	8	8
Agglomeration	0,85	8	8,5	7	6,5	6	5	9	7,5	7,5
Resources	0,65	6,5	7,5	6,5	6,5	7	6	8	8	8
Situational Factors	0,75	8,5	8,5	7	7	7	7	7	6,5	6,5
Other Factors	-0,8	7,5	9	7,5	8	8	6	6	8	8
Totals (after wt.)	-	43,9	42,3	37,4	35,2	34,9	32,8	36,4	34,6	34,6

Source: Nel (1994).

Notes:

- Based on the World Bank's approach and adapted by Etienne Nel (1994).
- Situational factors = living environment, climate, etc.
- Other factors = labour issues, political issues.
- Transport costs = costs of transport in South Africa.
- International Transport = accessibility of frequent bulk international links.
- Diseconomies of site = inefficiencies resulting from congestion, etc.

According to Table 4.21, Port Elizabeth is ranked in place number three after Cape Town and Durban. The aim of the Coega Development Zone is to regenerate the NMM as an economic hub of the Eastern Cape Province. The incentives that will go with the establishment of the zone

have the potential to attract investment into the region. This will bode well for forming forward and backward linkages for local industrial in general and the automotive industry in particular as it is enjoying a high performance status presently (PERCCI, 2005:21).

Additional to the locational benefits shown in Table 4.21, there are other advantages that endorse the locational suitability of Port Elizabeth for the Coega IDZ. Coega is equidistant between the industrial centres of Durban and Cape Town, and is therefore well situated in the country. Thus, its development will bring a resolve to the many challenges that include transportation costs and turnaround time in transportation of freight.

4.10 CONCLUSION

This chapter gives an economic overview of the Nelson Mandela Metropole and the implications for its economic growth and development.

The population of the region has grown significantly during the past two decades. This demographic growth has confronted the Metropole with challenges of infrastructural development. In terms of development indicators, approximately one-third of the population lives in poverty. This poses a big challenge to the Metropole to formulate a strategy to reduce these poverty levels. However, education levels in the region compare favourably with the rest of the Eastern Cape Province and the rest of South Africa. This forms a sound basis on which to develop human resources in the region.

Another area of concern in the Metropole is in the labour market. Table 4.6 shows that 28.2% of the labour force is unemployed in the Metropole as compared to 24.6% and 24.0% for the Eastern Cape Province as a whole and South Africa as a whole respectively. Although the discrepancy is not big, the implication is that the Metropole has to do something to reduce unemployment levels. Skills levels in the Metropole, as shown in Table 4.7, compare favourably with those in South Africa as a whole. That bodes well for human capital development.

Economic activity as shown in gross geographic value added, its growth, inflation and harbour activities, seems to be promising (see Section 4.6). The local economy has been growing at

fairly reasonable rates in the period 1998-2004 (see Table 4.12). The significance of economic activities should result in improving growth rates of the economy. The automotive industry of the Metropole is among the strongest in the country. It captures close to one-third of the country market in new vehicle sales.

Finally, the service infrastructure and spatial economic development have shown signs of improvement in recent years. This augurs well for the improvement of competitive advantage and higher business confidence in the region.

Resource and infrastructural development and the business environment including good government policies can help the Metropole in the path to industrial development. It is therefore important to explore aspects of the competitiveness of the Metropole. This is the topic of the next chapter.

CHAPTER 5

ANALYSIS OF THE NELSON MANDELA METROPOLE AS A LOCATION TO ATTRACT INVESTMENT

5.1 INTRODUCTION

The previous chapter provided an economic overview of the Nelson Mandela Metropole, aiming to develop an understanding of the region's historical development, its significant economic role-players, and the factors which determine its competitive ability. This chapter seeks to explore aspects of the Metropole's competitive advantage, based on responses that were obtained through a survey of the various economic sub-sectors of the manufacturing industry in the region.

As stated in Chapter 1, the manufacturing sector is regarded as the basis and engine of economic development within countries and regions. Thirlwall (2003:45) emphasises that industry possesses different characteristics from those prevalent in, for example, agriculture. Thus, most investment expenditure is committed to the manufacturing sector. It is, therefore, relevant that an empirical analysis of the manufacturing sector in the Metropole be viewed as representative of the region's economy in terms of its ability to attract investment. This chapter will therefore attempt to conduct this analysis in terms of the nature of firms making up the industry, their relationship with suppliers, the nature of the market for these firms, inter-firm competition and co-operation, their industry association affiliation, the effect of government policy on the industry's performance, and the ranking of the Metropole relative to other leading industrial centres.

5.2 METHODOLOGY USED FOR THE RESEARCH

A questionnaire, a copy of which appears in Appendix Four, was sent to the 939 firms in the manufacturing industry with the Port Elizabeth Regional Chamber of Commerce and Industry's (PERCCI) monthly publication. There are140 of these firms in Uitenhage and 799 are in Port Elizabeth, which translates to 14.9% and 85.1% representivity respectively. The questionnaire survey was supplemented with 17 interviews with some notable stakeholders in the Metropole's economy. A list of these interviewees appears in Appendix Five. A total of 95 questionnaires

were received back from the target firms, which represents a 10.1% response. Some were posted to the address that appeared on the questionnaire, while a telephonic and personal follow-up system had to be conducted to secure the return of other questionnaires. The extent of completeness of the questionnaires was varied. While some had answered their questions satisfactorily, 21 questionnaires contained several omissions.

The data contained in the responses to the survey questionnaires provides the basis for this analysis. The views which were provided through the interviews will be an additional commentary to the quantitative data from the questionnaires. The questionnaire seeks to establish the competitiveness of the NMM on the basis of available production factors, distribution channels, infrastructure and organisational structures, in order to meet industry needs. Question number 1 of the questionnaire accounts for the profile of the firms being surveyed. Following Porter (1998:23), from question 2 up to question 7, the questionnaire attempts to establish how the firms conduct their businesses with regard to relationships with suppliers, how markets are serviced, inter-firm competition and co-operation, and the significance of industry associations in the support system of the industry. The rest of the questionnaire is dedicated to establishing the kind of government policies the firms consider important in their attempts to achieve competitiveness. Lastly, the firms are asked to rank the leading industrial centres in South Africa in terms of criteria that reflect elements that are necessary to support a firm's efforts towards the achievement of competitive success. Section 5.3 presents the data obtained through the questionnaire survey. Section 5.4 places the empirical evidence into the perspective of Porter's Diamond of competitiveness, which, together with other theoretical models (see Section 3.2), is used to evaluate the overall economic performance of the NMM's manufacturing industries. The data is shown mostly in terms of percentage of the respondent firms and the percentages are rounded off. For example, 81 firms of 95 companies is 85.3%, which rounded to 85%.

5.3 AN OVERVIEW OF THE MANUFACTURING SECTOR OF THE METROPOLE

The following subsections will provide a bird's-eye view of the manufacturing sector of the Metropole from the point of view of data obtained through the survey. The data is shown in Appendix Six.

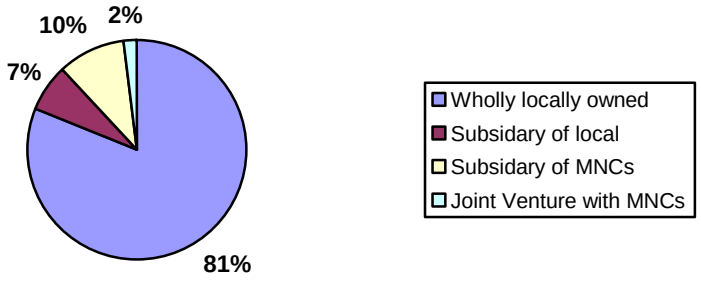
5.3.1 The Nature of Firms

The first part of the survey looks at the location in which the respondent firms operate. It also seeks to establish the size of the labour force, the annual turnover, and the ownership structure of the firms. It is important that information is provided in order to enable a fair assessment to be made of the sample's representivity.

81% of the 95 firms that completed and returned the questionnaires are trading in Port Elizabeth, while 14 of them are situated in Uitenhage. In terms of the size of the labour force, 79% of these firms employ between 0-500 employees, 12% between 500-1000 employees, while 5% are in the 1500-2000 labour force bracket and 4% over 2000 labour force.

As far as annual turnover is concerned, 77% of the firms generate between R0-100 million turnover, while the range of R100-R200 million annual turnover is generated by 7% of the firms and 6% generate between R200-R300 million annually, 3% of firms generate R300-R400 million in annual turnover; 3% have R400-R500 million turnover, and 4% generate over R500 million of annual turnover.

Figure 5.1: Ownership of manufacturing companies



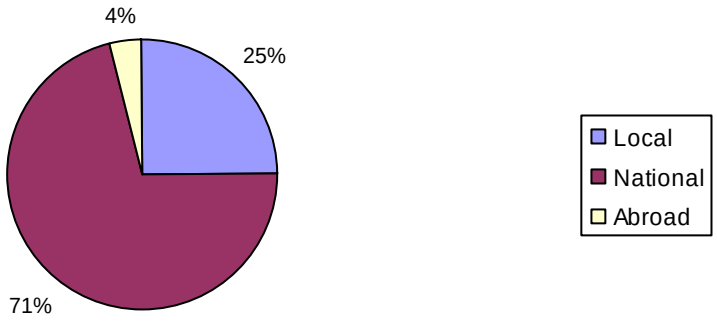
According to Figure 5.1, most of the firms are wholly locally owned (81%), 7% being subsidiaries of local companies, 2% constituting joint ventures with foreign corporations and 10% being subsidiaries of foreign multi-national corporations. Most of them fall under the small-scale enterprise category. A smaller percentage of them form the largest contribution to the local economy. According to PERCCI (2005:4), there are about 50 firms in the region that may be singled out as the major contributors to the Metropole's output.

5.3.2 Relationship of firms with suppliers

This question in the survey seeks to examine the relationships these firms have with their suppliers. Theoretically, linkages in buyer-supplier situations are conducive to competitiveness. This is achieved through efficient access to cost-effective inputs. More important than the access to inputs is the geographic proximity of firms, which can facilitate the co-ordination of the industry's activities. Therefore, this position encourages the spirit of innovation (Porter, 1998:31).

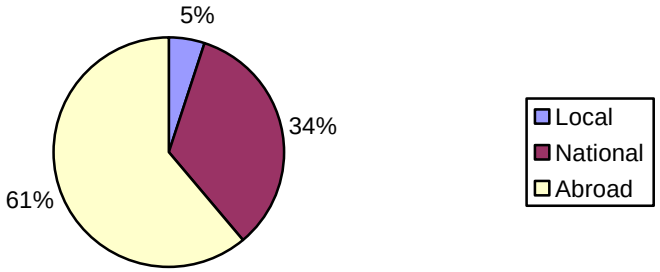
The survey enquired whether these firms obtained their inputs such as raw materials, components and machines locally, nationally or abroad. They were to give their responses in percentages of quantities. Establishing the locational source of inputs gives an insight as to whether firms benefit from external economies based on geographic proximity. For example, the distance between the source of raw materials and their market reflects differential transport costs (Weber, 1929:127). The survey also sought to reveal whether or not the firms' requests for inputs were satisfactorily met in terms of quantity and quality.

Figure 5.2: Distribution of Raw Material from Suppliers to the Metropole's Manufacturing Industry



As illustrated in Figure 5.2, 93 firms, (98%), indicated that they sourced about 4% of raw materials locally, 25% nationally and 71% abroad. The other two firms,(2%), did not provide a response to this sub-question. About 98% of the firms mentioned that they received the requested quantities of inputs and 96% of them indicated that they received the requested quality of inputs. No firms answered in the negative.

Figure 5.3: Location of Component Suppliers to Manufacturing Firms



Regarding the sourcing of components, 98% of the firms obtained about 5% of components locally, 34% nationally, and 61% abroad (see Figure 5.3). Furthermore, 97% answered that they received the requested quantities, and 86% indicated that they were sent the required quality of

components. No firms indicated that they were sent incorrect quantities or different quality of inputs. Two firms did not give a response.

As regards sourcing of machines, either new or second-hand, no responses showed that there were firms that ordered second-hand machines. However, 98% of the firms indicated that they ordered 24% of their machines nationally and 76% abroad. In terms of quantity and quality, 97% of these firms were receiving the requested quantities and quality of machines.

It was also asked in the survey whether the firms were ever approached by their suppliers with a view to offering assistance with problems experienced from the products, suggestions towards product enhancement, or offering explanations of product characteristics. Some firms (62), (65% of the total response) answered these sub-questions in the affirmative (see Appendix Six, Question 2.2). Furthermore, 66% of the firms indicated that there were associations that offered them help in order to improve service to customers. These included PERCCI and various professional bodies to which the employees of the various firms are affiliated.

The trend of obtaining a bulk of the inputs from abroad could be ascribed to the globalisation of markets, and these firms, particularly those which have parent companies abroad, find themselves in the network of the holding companies. As far as the automotive industry is concerned, the import rebate scheme under the *Motor Industry Development Programme (MID*P) could also be cited as a contributory factor in this trend. This scheme allows importers of components to claim back import duties (See Appendix One).

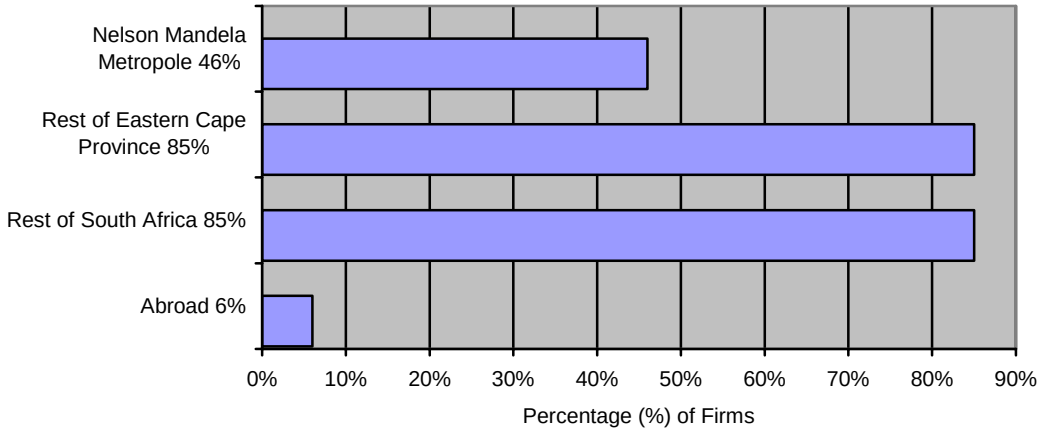
5.3.3 Market for the firms

In this section, the survey attempted to establish the nature and location of the market for the output of the companies. Theoretical literature emphasises the importance of the nature and the location of market demand in improving competitiveness. According to Porter (1998:43), demand by different consumers, particularly sophisticated ones, helps to put pressure on firms to constantly create innovative ideas. It is these ideas that impact positively on the improvement of the competitive advantage of firms. He further asserts that firms have to first satisfy the local

market, where they learn how to meet customers' needs, and see whether they will be able to compete internationally.

It is shown in Appendix Six that 65% of the firms sell 96.5% of their products directly to domestic markets, while 35% sell 91% of their products to foreign buyers. No firm indicated that a consortium was used to market its products, and no other method of marketing the products was indicated.

Figure 5.4: Markets for products produced in the Nelson Mandela Metropole.



In the survey the firms were asked to indicate the location of the outlets for their products. Figure 5.4 shows that 46% of the firms are linked to outlets in the NMM, where 7% of their products can be purchased. 85% of the firms indicated that 11% of their sales go to the rest of the Eastern Cape Province, while 62% of their sales take place in the rest of South Africa. However, 6% of the firms have 67% of their products sold abroad.

The firms' responses show that markets other than those in the Metropole are preferred. Even the rest of the Eastern Cape Province is less preferred than the rest of South Africa and abroad. This position does not bode well for developing local markets. Porter (1998:87) stresses that firms should first satisfy local consumers in order for them to develop their international competitiveness.

Asked if any mechanisms could help improve understanding of customer needs, 31% of the firms indicated that the local chamber of commerce and industry (PERCCI) arranges some seminars and training through the Port Elizabeth Technikon in order to achieve this end. However, 52% denied that there were mechanisms to create a better understanding of customer needs and 17% did not respond to this question. It is important to try to improve understanding of customer needs, as this would enlarge the local market, which it is always advisable to service first.

5.3.4 Inter-firm competition

The survey attempted to get the firms to reveal the location of their competitors, the size of enterprises involved in the competition, and the main strategies they employ to out-compete their rivals. According to Porter (1998:117), firms that achieve success are those involved in intense domestic competition as they pressurise each other to innovate. This rivalry is strengthened by the geographic concentration of firms.

Some of these firms (27%) indicated that their rivals are in the NMM, 11% in the rest of the Eastern Cape, 41% in the rest of South Africa, and 21% abroad. The data reveals that there are few local rivals. With increased local investment in the Metropole, more firms would compete against one another and that would create a greater eagerness to innovate.

Regarding the question of the size of rival enterprises, Appendix Six shows that 55% of the firms compete against large enterprises, 9% against medium-scale enterprises, and 36% against small-sized companies. The large-scale enterprises against which these firms compete are in the rest of South Africa and abroad. Again, the Metropole would need investment in order for large-scale enterprises to locate in this region.

Finally, most firms (91%) use quality as a strategy to out-smart their rivals. 86% use price as a strategy, 78% emphasise the importance of efficient delivery, and 21% spend more efforts on differentiating their products. Interestingly, the strategies these firms use are not suitable to gaining and sustaining competitive advantage. In a situation of fierce competition, the strategy that succeeds in sustaining a competitive position is the creation of new designs (Porter,

1998:112). One may argue that the local levels of competition are low and therefore the continuation of that position delays the region in improving productivity rates. Porter (1998:20) strongly emphasises that it is improved productivity on which investors base their preference for a particular location.

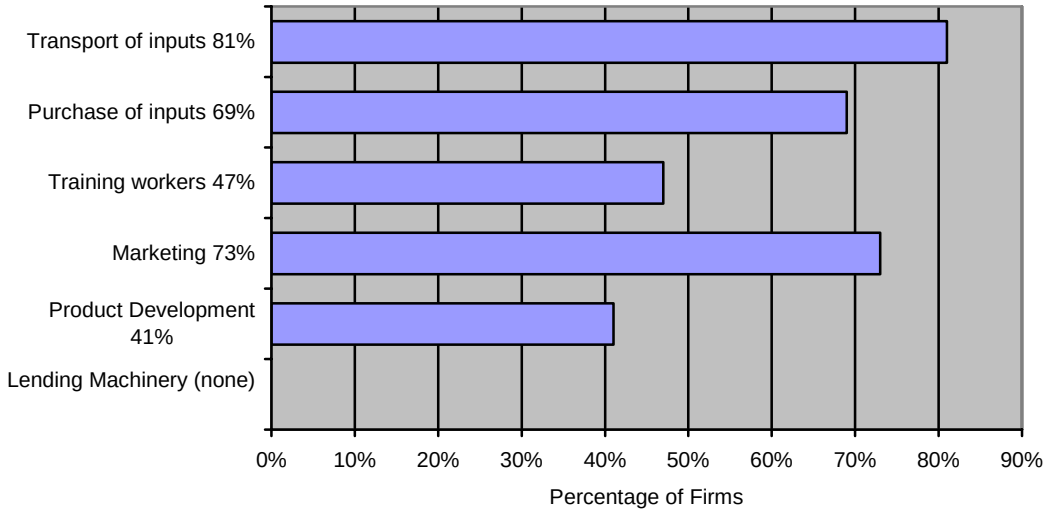
5.3.5 Inter-firm co-operation

The survey was extended to examine the rate of inter-firm co-operation, which is characterised by horizontal arrangements in sharing of resources between the firms. The nature of this co-operation can exist side-by-side with competition in order to reinforce rivalry among supporting and related firms.

First, the firms were asked to reveal if they had any formal co-operative arrangements with other firms. Nineteen percent answered in the affirmative, 79% had no arrangements and 2% did not give a response. Those which had arrangements with other firms indicated that the type of arrangements that existed were organised through the local chamber of commerce (PERCCI).

Second, the firms were required to state how the informal relationships they have with others originated. Seventeen percent of the firms cited family ties as the basis on which the relationship started. Eleven percent mentioned that they started through neighbourliness of firms, 73% indicated that they originated through interactions at seminars, 62% revealed that an industry association was the source of creating these relationships, and 5% did not give a response. It would seem that there is a need to promote interaction among industry stakeholders in order to create trust and foster relationships of co-operation. There is a great deal of theoretical literature that confirms that co-operation among firms would lead to reduced transactional costs. In the case of the Metropole's firms, only a small percentage (19%) of firms are engaged in formal relationships. This is supposed to be encouraged by industry associations, instead of them lobbying for lower costs, for example for electricity (Porter, 1998:149).

Figure 5.5: Inter-firm Co-operation



Lastly, the firms were asked if they co-operated in various ways in their operations (see Appendix Six, Question 5.3). Figure 5.5 illustrates that no responses were received with regard to co-operation concerning lending of machinery among firms. Forty-one percent of firms indicated that they participated in an arrangement to improve product development; 73% co-operated in marketing of products; 47% were involved in a co-operation to train workers; 69% co-operated in the purchase of inputs; and 81% had an arrangement for the transportation of inputs and products. No other methods of co-operation were mentioned. It would seem that marketing and transporting of products and purchasing and transporting of inputs enjoy greater acceptance as areas of co-operation among these firms. The areas that do not enjoy the same level of acceptance are product development and skill improvement of workers, and yet they are the most important in terms of sustaining long-term competitiveness. Porter (1998:144) argues that advanced or specialised factors are created, and they are necessary to enable firms to hold on to their competitive positions. He further asserts that their ability to sustain competitive advantage is due to their need for large investments. Thus, co-operation among firms creates positive externalities and increasing returns. This can be compared with Marshall's (1920: 620) view that one of the advantages of co-operation is that once an idea is created in this kind of environment, more suggestions follow and more ideas emerge.

For example, the final question under inter-firm co-operation seeks to establish if ideas are ever exchanged among the firms in order to resolve their problems and improve their performance. Nine-one percent of the firms indicated that this does happen occasionally. "Occasionally" might mean by chance. What is needed is the realisation of benefits that would accrue were opportunities to be created by co-operation. This can happen when plans are in place to build trust among firms through these kinds of relationships.

5.3.6 Industry Association affiliation of firms

The firms were asked whether they were members of industry associations. Industry associations have an important role in the creation of specialist factors in an industry. The importance of the specialist factors lies in their ability to provide sustainable competitiveness to the owners, as they are not easy to replicate (Porter, 1998:123).

About 95% of the firms indicated that they were affiliated to various industry associations. For example, the original equipment manufacturers (OEMs) are affiliated to the National Association of Automotive Manufacturers of South Africa. The component manufacturers are affiliated to the National Association of Automotive Component and Allied Manufacturers (NAACAM). However, most of them indicated that they are also affiliated to PERCCI.

Concerning the question of what they use the association for, 87% mentioned that they enjoy support from the association for advice in legal and regulatory matters, and 91% were of the opinion that the association provided information on other enterprises. However, all this interaction occurred only on an occasional basis. What they often received was an invitation to attend seminars and the provision of information bulletins. Seventy-one percent of the firms felt that support through seminars was forthcoming regularly, while 96% thought the provision of bulletins was on a regular basis. No firms specified other forms of support from the associations. Perhaps the information on other enterprises would be more beneficial if it was provided on a regular basis. This type of information is critical in developing new ideas for the purpose of innovation.

Concerning the question of whether industry associations provide leadership within the industry, 31% of the firms indicated that they did receive support in matters of leadership concerning logistics. However, this support was limited, as the associations did not provide assistance as expected. The interviews conducted with some stakeholders in the industry also revealed some shortcomings in this respect.

The firms were also asked to reveal the types of benefits that emerged from their affiliation to the associations. Eleven percent of the firms felt that the benefits included technology transfers. No firms indicated any accrual of benefits in the form of increased exports. Three percent of the firms thought that the results included increased turnovers while 15% indicated that the relationship resulted in improved labour productivity. There were no responses that reflected increased employment. Twenty-one percent felt that the presence of industry associations contributed to the smooth running of the industries, as inter-firm transaction costs fell because of efforts that eliminated bottlenecks. A few other firms cited the streamlining of regulations. More firms agreed that the presence of associations has resulted in reducing transactions. Although a fall in transaction costs is important, it does not contribute to sustained competitive advantage (Porter, 1998:126).

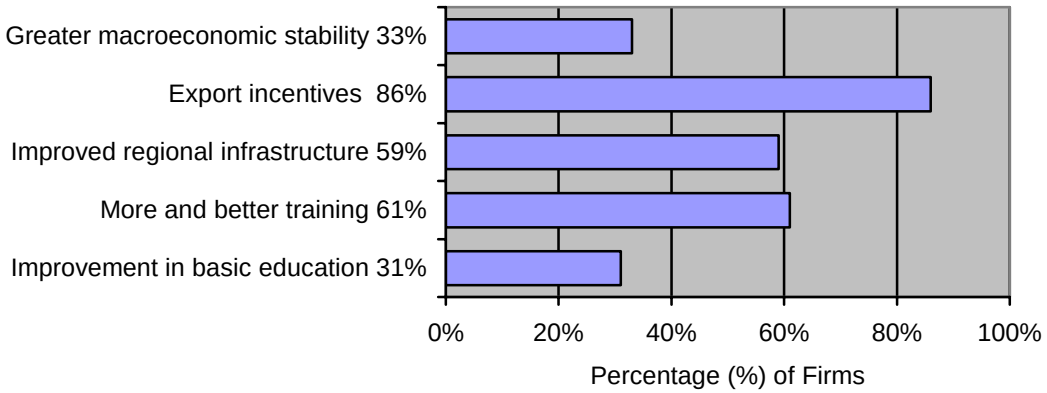
5.3.7 Government Policy

The role of government is critical in creating competitive industries. Government policy must assist in deploying the economy's resources, for the economy to continue upgrading (Porter, 1998: 617). Therefore, the survey sought to establish whether government (local, provincial and national) was a committed participant in supporting industry initiatives.

Figure 5.6 shows that 31 firms (which represent 33% of the responses) indicated that government participation was visible. However, they felt that it could be stronger than it was. This could be achieved by government making itself more visible in the industies' activities. In this regard, more information about government assistance could be provided. For example, there seem to be low levels of clarity concerning information and access to Department of Trade and Industry (DTI) provision of assistance. However, 46% of the firms disputed that government has an active part in industries' activities while 21% offered no responses in this respect. Of course,

government's industrial policy can be selective in its efforts to achieve particular results. Thus, some firms might be selected as targets of the policy. It is therefore necessary for firms to improve their interaction within the industry so as to be deemed part of the targeted industries. Industry associations have a major role to play in achieving this industry interaction. Porter (1998:131) argues that industrial policy works better when applied to a cluster of firms.

Figure 5.6: Government policies that could have enhanced economic performance of manufacturers



It was further asked which government policies would have contributed most to improving the effectiveness of industry initiatives. 33% of the firms were of the opinion that the presence of greater macro-economic stability policy was necessary; 86% felt that export incentives were needed to improved economic performance; 59% indicated that improved regional infrastructure should form part of policy regime designed to boost economic importance; 61% needed policies that would support efforts to improve staff training, and 31% preferred to see improvement in the provision of basic education. Among these policy instruments, export incentives came out as the most approved type of support from government. One could argue that improved infrastructure is as important. According to Porter (1998:149), creating advanced factors ensures achievement of sustainable competitive advantage. Policies to improve training fall into this category of created advance factors. There was a small percentage of firms which could not respond to the question of government policy. The reason might be a lack of understanding about what they

can expect from government. Again, industry associations should place measurements to gauge their effectiveness in creating a better environment of undertaking within the industry.

5.3.8 Ranking of the leading industrial centres in South Africa

The respondents were asked to rate the leading industrial centres (Nelson Mandela Metropole, Cape Town; Durban; East London and Gauteng) as centres for industrial location on a scale of 1 to 10 (1 being the top rating and 10 the lowest rating). The NMM has to compete with these other centres in attracting investment. It is therefore critical to canvass views that reflect on the attractiveness of these centres, based on locational factors that they possess.

Table 5.1 Ranking of the leading Industrial Centres in SA (on a scale of 1-10, 1 being top rating and 10 being the lowest)

	Nelson Mandela Metropole		East London	Dur-ban	Cape Town	Gauteng
(i) General infrastructure	5 (37)	6(91)	7 (34)	2 (37)	2 (37)	2 (11)
(ii) Level and quality of labour force	4 (37)	4(91)	4 (34)	3 (37)	3 (37)	2 (11)
(iii) Supporting industries	3 (37)	3 (91)	3 (34)	2 (37)	2 (37)	2 (11)
(iv) National Government support	6 (37)	7 (91)	6 (34)	7 (37)	5 (37)	5 (11)
(v) Local Government support	6 (37)	6 (91)	7 (34)	6 (37)	5 (37)	5 (11)
(vi)Location to access international markets	1 (37)	1 (91)	1 (34)	1 (37)	1 (37)	3 (11)
(vii)Location to access national markets	1 (37)	1 (91)	1 (34)	1 (37)	1 (37)	3 (11)
Totals	26	28	29	22	19	22

Table 5.1 presents rankings from the respondent firms. Figures in brackets indicate the percentage of firms that gave the responses. There is a high percentage of firms which gave rankings of the NMM, while in cases of the other centres this percentage seems to be falling. Some firms indicated that they had no indication to offer for centres other than the NMM as their understanding of them was either limited or non-existent.

The ranking of the NMM came form 91% of the respondent firms; East London's ranking was offered by 34% of the respondents; 24% gave rankings on Durban; 37% gave rankings for Cape Town, and 11% were firms that offered views on Gauteng.

The response received in respect of Gauteng was the lowest among the five industrial centres appearing in Table 5.1, making it difficult to include it in the ranking with others. The other three, East London, Durban and Cape Town, will be compared to the 37% response of NMM. A second column is therefore opened for the Metropole to show the 37% response.

Insofar as the general infrastructure of these industrial centres is concerned, Durban and Cape Town obtained the highest ranking of 2, while the NMM was ranked number 2 from the bottom of the list, and East London came out at the bottom. In the category of level and quality of the labour force, Durban and Cape Town have the best quality of labour force, with East London and the NMM taking the second place. Durban and Cape Town are perceived to be the best in the category of supporting industries. As far as support from national and local governments is concerned, the ratings are low, with Cape Town receiving the best support. Most of these centres are ranked at the top for having good access to national and international markets.

The components of the criteria used for ranking these industrial centres are supposed to work jointly in order for their support to be effective. For example, in the case of the NMM, there is a good rating for access to markets and yet it has inadequate infrastructural capabilities. In fact, the Metropole suffers deficiencies in most of the criteria. This could impact negatively on its ability to capture the benefits that arise from favourable access to markets. Improvements in these components need the political will of the government in terms of the investment strategy of its industrial policy. Of course, there is the promise that the Coega IDZ will contribute to infrastructural improvement as well as raising the quality of labour.

The NMM is ranked third, with a total ranking of 26. Table 5.1 shows that it has insufficient general infrastructure, lower quality of labour, and inadequate government support. The locational suitability of the Metropole for attracting investment was also measured in 1994 (See

Table 4.22). In that survey, the Metropole was ranked in the third position after Cape Town and Durban. It just surpassed Johannesburg by one point. With the development of Coega, the Metropole might have its strategic framework for development reinforced.

The Coega project is strategically positioned centrally on the main east-west trade routes in the southern hemisphere, resulting in it being equidistant from the major markets of North and South America, the European Union and the Asian-Pacific Rim (Gateway, Eastern Cape 2000: 3). Furthermore, South Africa's industrial policy stresses international competitive advantage as a criterion for regions to qualify as host locations for IDZ.

As mentioned earlier in the chapter, these findings will be analysed in the next section by comparing the data with some theoretical foundations of competitiveness.

5.4 ANALYSIS OF THE SURVEY

This section is designed to analyse the findings of the survey in the various sub-sectors of the manufacturing sector in the NMM. The theoretical concepts of location that were discussed in Chapter 3, together with empirical analysis in Chapter 4, will be used to evaluate the competitiveness of the economy in the NMM.

The theoretical literature on location highlighted the importance of geographic, cultural and institutional proximity. Porter (1998:78) emphasises that proximity of business influences competition in three ways: by improving the productivity of firms in that region, by enhancing the pace of innovation, and by encouraging new business formation. These companies enjoy special access to closer relationships and information. Modern competition relies on increasing productivity. Firms will be productive if they use sophisticated methods of production.

5.4.5 Factor conditions

Factor conditions include resources such as raw materials, ordinary labour force and general infrastructure, (basic) sophisticated infrastructure and skilled personnel. As indicated in section 3.2.1.1, competitive advantage comes from using advanced factors. This is because it is hard to replicate them because substantial investments are required for their creation.

The NMM features among the leading industrial centres in South Africa and is a major industrial hub of the Eastern Cape Province (PERCCI, 2005:5). In Section 4.6, it was noted that it contributes approximately 44.1% of the GGVA of the Eastern Cape Province, with its manufacturing sector producing 61% of the province's industrial output. The Metropole's economy is driven by two major car manufacturing firms, General Motors SA and Volkswagen SA, as well as by a number of automotive-related industries which are export-oriented.

Regarding factor conditions in the Metropole, it has a higher percentage population of over-20-year-olds who have a tertiary education than the rest of the Eastern Cape and has approximately the same percentage as South Africa (see Table 4.5). Even in categories of percentage population who have attained secondary school and matric, it registers higher percentages than the Eastern Cape Province and South Africa as a whole. The skills levels in the Metropole compare favourably with the Eastern Cape Province and South Africa. Table 4.7 showed that in the skills categories such as senior management, professional, clerks, service-related, craft and trade, and plant and machinery, the Metropole is relatively better endowed with skills than both the Eastern Cape Province and South Africa.

According to PERCCI (2005:6), the Metropole's skill levels are backed up by the presence of several tertiary institutions such as Port Elizabeth Technikon and the University of Port Elizabeth, which of course have now amalgamated to form the Nelson Mandela Metropolitan University. Together with several technical colleges, these institutions constitute the backbone of creating skills for the Metropole.

However, the survey conducted for this study has revealed several constraints to the development of the Metropole. Such constraints mean that the Metropole would be more competitive in the absence of such impediments.

One of the weaknesses of the Metropole's economy that has been established in this research concerns the location of inputs (raw materials, components and machinery). The respondent firms indicated that they obtained a bigger percentage of their inputs from outside the Metropole.

The two motor assemblers (GMSA and VWSA) source about 75% of their raw material from the rest of the country and 25% abroad. Regarding components, they source about 25% of these from the Metropole, 20% from the rest of the country and 55% from abroad. Other sub-sectors of the manufacturing sector have indicated similar trends of sourcing inputs. For example, the textile, clothing and leather sub-sector obtains more than 50% of its inputs from abroad. This is a drawback in the local economy. The local input market does not seem to get support from local firms. Thus it will lack opportunities to develop. It has been revealed in the interviews of this research that local companies source inputs from outside because local suppliers sell inputs of inferior quality. PERCCI maintains, in interviews for this research, that there is a steady turnaround of the situation. The local suppliers are subjected to certain qualification standards. Most of the suppliers in the Metropole have now signed agreements to conform to these stipulated standards. For example, the automotive industry's quality standards are certified by the South African Bureau of Standards Internal Standards Organisation (SABS ISO) 9000 Registration Scheme, which correlates national standards with others from various countries (developing and developed). These standards on quality management systems are recognised and implemented internationally by more than 70 countries. The ISO develops voluntary technical standards that add value to all types of business operations.

Geographic proximity of businesses provides an efficient method of sourcing inputs. These businesses provide a special supplier base. Obtaining inputs locally instead of from distant suppliers reduces transaction costs. Proximity improves communication. It facilitates attempts by suppliers to provide support services. The reduced distance between firms and the suppliers results in improved productivity.

The majority of firms in all these industries belong to various industry associations. The indication by respondents was that these associations are failing to provide leadership for them. Porter (2000:113) claims that trade associations that represent firms can have a greater influence on government in areas of improving factor conditions. These areas include the supply of appropriately trained personnel, the creation of physical infrastructure, and improvements in appropriateness of research activities at universities. The trade or industry associations should

focus their objectives on innovation and upgrading the economy. Interviews of the research established various reasons for ineffectiveness of industry associations.

Some stakeholders in the industries maintain that the ineffectiveness of industry associations is due to conflicting interests of their affiliates. This is not surprising if one considers the variety of associations to which industry leaders are affiliated. Some of the interviewees have made it clear that their loyalties lie with their professional bodies. Furthermore, some industry associations have a scope that is focused nationally rather than locally. National associations are often not sufficient to address local issues that are pertinent to improving productivity. Trade and industry associations must reorganise their roles, which too often are associated more with lobbying government and hosting social functions than focusing on innovative activities. They can provide a forum for the exchange of ideas, and focus on collective action to overcome impediments to improved productivity.

Concerning the supply of well-trained personnel, most of the firms in the sub-sectors of manufacturing indicated that it was crucial that the government should have support policies for more and better training of personnel. Furthermore, it was revealed in the interviews that the NMM had low levels of trained human resources. However, this research shows that the Metropole compares favourably with the rest of South Africa in terms of skills and levels of education (See Tables 4.5 and 4.7). Porter (1998:31) argues that competitive advantage is achieved from knowledge, relationships and motivation. Industry associations should provide a forum to address problems such as these.

The role that trade and industry associations assume is reflected in companies such as in tourism, apparel and agriculture. For example, in the Netherlands, grower co-operatives have established handling facilities that provide the Dutch flower cluster with competitive advantages. The Dutch Flower Council and the Association of Dutch Flower Growers Research Groups have adopted functions such as applied research and marketing (Danielson, 1988:82).

In the case study of Silicon Valley in the USA, industry associations were instrumental in encouraging businesses to locate in proximity. The industry association has played a big role in

building the capacity of the cluster. This is achieved through the creation of a forum to exchange ideas, which in turn helps to speed up the pace of innovation (Danielson, 1988:82).

More than 50% of the respondent firms indicated that improved regional infrastructure was one of the preferred components in government policy. According to the ranking of industrial centres, the NMM's infrastructure received a rating not below that of other centres. However, theoretical literature states that only specialised infrastructure will contribute towards competitive advantage (Porter, 1998:149). Interviews revealed that the local infrastructure needs upgrading in certain areas. These include the local airport and railways. Some attempts to improve infrastructure are underway. These efforts include the development of the Industrial Development Zone (IDZ) and a deep-sea water harbour at Coega.

5.4.6 Demand conditions

Section 3.3.2.2.2 indicated that according to Porter (2000:346), it was more the nature of demand that contributed to competitive advantage than the size of demand. Furthermore, competitive industries will be able to compete internationally. But this can only be achieved when sophisticated local customers interact with suppliers to enhance the pace of innovation. In South Africa, demand conditions have been weak owing to import substitution policies. These policies further contributed to the emergence of uncompetitive companies. According to Hosking and Lloyd (1999:39), weak industrial and supporting functions in South Africa resulted in the inability of firms to respond appropriately to local and international demand.

In demographic terms, the NMM is the fifth largest metropole in South Africa and the largest in the Eastern Cape Province (Christopher, 1999:8). According to PERCCI (2005:20), the Metropole has a thriving commercial sector with many shopping centres and malls that offer consumers a wide selection of products. It is further stated that Port Elizabeth was rated the second best city in South Africa by a survey that was conducted among leading government officials and business executives in 2001. The city received high ratings in crime prevention and in attracting investments. PERCCI (2005:21) further asserts that the Metropole is fast becoming a major tourist destination for foreign tourists as well as local visitors. These features, including

several others such as sports stadia and lifestyle, add to the region's potential for a sizeable market for its products.

The survey of various sub-sectors of the manufacturing sector revealed that most companies source their inputs (raw materials, components and machines) from the rest of the country and abroad (see page 122). This has been the trend since the advent of liberalisation and the globalisation of markets. This practice has prevented local firms from working closely with local suppliers to establish trust among them and promote innovation. Because of this connection with overseas firms (sometimes with parent companies in the global network), local firms found themselves servicing more foreign contracts for the supply of their products than the local demand. The survey indicated that some companies in the automotive, textile and stainless steel industries sell more than 50% of their output to overseas markets. One leading company in the stainless steel business sells 100% of its output to overseas customers. Some large share of the Metropole's output finds a destination in the rest of South Africa. On average, 10-15% of locally produced output is consumed locally. The rest is shared between customers in the rest of South Africa and abroad.

A potential competitive advantage of the NMM lies in the unmet demands of its own residents. The bigger percentage of the residents may be earners of incomes that are relatively low. But high population density creates a significant purchasing power and a reasonably large market. For example, Goldblatt's Store in Chicago was revived after becoming insolvent. The company closed most of its branches except those that were situated in densely populated areas. However, the business opportunity in densely populated areas does not emerge from the size of the market, but from its character. People in lower-income ethnic communities have a distinctive need (Porter, 2000:35). These needs should be serviced with tailored goods and services. Porter further argues that most enterprises design goods and services for white middle-class customers. As a result, these products are not suitable for the majority of the population. This approach needs to focus on segments of the market. What is important about this strategy is that these businesses will not only sell to the local communities, but also to similar communities nationally and even internationally.

The example of a focus on first satisfying local demand is shown in the progress of America's Food Basket, a Cuban-owned supermarket that is based in Boston (Porter, 1998:88). This example suggests that there is potential for growth in retailing concepts that cater for local ethnic demand. The Food Basket developed a product mix that satisfied local demand more than the mainstream supermarkets do. This augurs well for demand conditions. It means that improvement in innovation driven by segmentation (focus on market segments) can do more to make the NMM competitive than to follow conventional methods of retailing.

This is definitely a positive trend in the NMM, as verified by significant investments made by local companies (See Table 4.20). Local manufacturers have their focus on international trade and have complied with various requirements of international quality control measures with a view to develop an export-driven economy (PERCCI, 2005:25). This augurs well for the achievement of competitive success by local industries. A particularly striking example in this regard is how the East Asian countries strengthened their exports in order to achieve growth (See Section 2.7.1).

5.4.7 Related and supporting industries

Some observers argue that advances in transportation and communication have diminished the competitive significance of location. According to Porter (2000:35), growth concepts such as just-in-time delivery, superior customer service and product development that promote relationships between customers and suppliers, continue to render location an important entrepreneurial factor. For example, Matrix Exhibits in Atlanta supplies trade-show exhibits. Because it is six minutes' drive from the Georgia World Congress Centre, it can respond more quickly than its more distant rivals to exhibitors' frequent requests.

The NMM is fairly unique in that it is a closely-knit area with businesses, residential areas, schools and a very efficient port and airport existing in close proximity to one another. The tourist attractions such as the Greater Addo Elephant Park, Shamwari Game Reserve and the Wild Coast form part of the attraction of the region. The government has also shown some commitment to the region by establishing major developments such as the Coega Industrial Development Zone (PERCCI, 2005:28). The Department of Trade and Investments has also

displayed great support for the region in appointing a permanent regional representative. Other recent moves have been the establishment of a logistics park in Uitenhage, whose aim is to enhance the efficiency of the automotive sector. This park offers some core structures such as logistics, IT and service industries (AIDC, 2004:2). Such structures bode well for the region in creating backward and forward linkages among the related and supporting industries.

Suppliers in the NMM mostly service customers in the rest of South Africa and abroad. The survey indicated that local firms sourced more than 50% of their inputs from abroad. Another big percentage of inputs is sourced from the rest of South Africa. Porter (1998:20) argues that competitive advantage is achieved from improved productivity. The firms that focus on foreign markets are prevented from capturing the opportunities that location provides. The NMM occupies what should be an economically valuable location. Its location can offer potential advantages to businesses that benefit from proximity to business nodes, logistical infrastructure, entertainment and tourist destinations, and concentration of companies. Local firms have to revisit their location strategies. Building relationships with local firms can lead to competitive advantage. Strategic location develops opportunities for relocating of warehouses, data processing, food processing and many more activities that enhance the benefits of proximity of business.

The trend of sourcing a large proposition of inputs from abroad may be associated with the fact that some of these firms have parent companies that are drawing them into the international network (Makuwaza, 2001:157). This seems to be a viable option in terms of gaining competitive advantage by local firms. In addition, the Motor Industry Development Programme (MIDP) (See Appendix One), allows the importers automotive inputs to receive rebates on import clusters.

The survey revealed that there was little co-operation among the firms in the NMM. Proximity of companies encourages co-operation among firms. This enables firms to capture external economies and spill-overs that emerge from concentrated firms. The respondents were asked to indicate their co-operation in areas such as:
lending machinery;

product development;
marketing;
training workers;
purchase of inputs;
transport of inputs and products.

The training of workers was the most prominent area of co-operation among the firms. More than 50% of the respondent firms confirmed the prominence of this area. The point is that the level of co-operation seems to be low among firms in the Metropole. It is interesting that this problem seems to be evident among the role-players in the Metropole. There are plans that are being made to improve this situation. There is a small venture that is being developed into what is to be known as the Nelson Mandela Bay Logistics Park. This park will be situated next to VWSA in Uitenhage. The stakeholders in this facility include the Nelson Mandela Metropolitan Municipality, the Eastern Cape Development Corporation and the Development Bank of South Africa. This is a R100-million project to be funded by the Eastern Cape Provincial Government through the Eastern Cape Development Corporation and backed by the Development Bank of South Africa. The Nelson Mandela Metropolitan Municipality has budgeted R35 million for the project, with the hope that there will be creation of hundreds of jobs. The project co-ordination is the responsibility of the Automotive Industry Development Centre (AIDC).

This initiative recognises that it is normally not cost-effective to relocate a manufacturing plant. It is therefore the focus of the project to provide the capacity to establish fairly low-cost component manufacturing. The park offers logistics, IT and services industries which form the core structure of the project. The project is still in its infancy but its objective is to create a strategic location for the automotive industry.

5.4.8 Firm structure, strategy and rivalry

Competition among firms is a characteristic of effective geographic, cultural and institutional proximity of firms. Porter (1998:120) argues that domestic rivalry pressurises firms to embark on alternative approaches in strategy. It also enhances innovation, which prevents foreign firms from penetrating local markets.

As stated in section 4.4.2, the Metropole has access to world-class tertiary education and research institutions. Together with the newly-established logistics park, the research facilities offer encouragement to innovative tendencies among firms. In this manner, the rivalrous spirit is promoted within industries. PERCCI (2005:30) holds the view that the region offers an efficient and sophisticated infrastructure, both physical and communicative.

The surveyed firms indicated that 61% of their main rivals were located abroad, while 39% were in the rest of South Africa. It was only companies from the small sub-sectors of manufacturing that indicated that they had competitors in the Metropole. Therefore, the intensity of local competition is lacking. Some of the firms in the bigger sub-sectors of the industry have connections abroad in the form of parent companies. Furthermore, the concentration of ownership in the industry has led to low rivalry.

According to theoretical literature, the influence of location on competition depends on how firms compete. Competition depends on innovation and the search for strategic differences. Close linkages with customers, suppliers and other institutions are important. Location influences competitive advantages through its effect on productivity growth. Factor inputs are usually abundant if competitive advantage rests on how productively these factor inputs are used. Companies will have more linkages if they locate in proximity. This provides the capacity and the flexibility to act quickly. These firms can source what they need to implement innovations more quickly. Furthermore, proximity of companies places constant pressure on firms to innovate. This is because of competitive pressure, peer pressure and constant comparison that prevail in a cluster.

Because sophisticated customers are part of concentrated businesses, companies that are located in proximity have a better opportunity in the market than isolated competitors. Computer firms based in Silicon Valley in the USA access customer needs and trends with a speed that is hard to match by companies that are located somewhere else. The continuous relationships among firms that are closely located provide the firms with opportunities to learn early about evolving technology and the availability of components and machinery. Such learning is made easier by

the ease with which site visits and frequent face-to-face contacts are made. A firm that depends on distant suppliers faces a bigger challenge in every activity it co-ordinates with other firms in matters such as contracting, securing delivery, and obtaining technical and service support. In situations such as these, innovation can be more difficult in vertically linked firms. This is particularly true with firms that have difficult trade-offs when innovation reduces asset values, and when current products have to be maintained in the face of new ones being developed (Porter, 2000:39).

The survey also revealed that most firms in the Metropole compete against large enterprises. 64.6% of firms indicated that their rivals are large enterprises. This situation is not conducive to rivalry, which in turn would encourage the formation of new businesses. Barnes (1998:5) argues that the evident global nature of markets and high barriers to entry prevents the proliferation of small businesses. Furthermore, the support services for small and medium businesses in South Africa have still to be reinforced. Local companies are facing the challenge of foreign large enterprises flooding the local market with imports. The local exporters also face stiff competition in foreign markets from large companies in the global network. The remedy, according to the theoretical literature, is for local companies to ensure that local markets are serviced properly. That can be achieved by segmenting the market to create a focused marketing. This will create expansion to local markets and, further, create new business. Competition will be localised. The next chapter provides a conclusion to this survey and the thesis as a whole.

CHAPTER 6

CONCLUSION

6.1 INTRODUCTION

The biggest challenge facing South Africa is the need to transform its economy into a highly productive and competitive one. This challenge is not for the government alone but other stakeholders such as business, labour and civil society should also contribute to meet it. The inability of the county's economy to achieve reasonably high levels of growth has resulted in serious socio-economic challenges such as increasing unemployment, a widening poverty gap, and low levels of new investment (see sections 4.4 and 4.8). This does not augur well for competitiveness.

The NMM provides a major hope for economic growth and development of the area in particular and the Eastern Cape Province in general. As mentioned in Chapter 5, the Metropole is attempting to create an export-driven economy. Studies have shown that export growth can help to upgrade an economy. As the automotive sector of the Metropole provides a backbone of the local economy, its export growth can secure a strong future for itself. However, there is a need to improve competetencies in the economy, such as labour skills, in order to attract local and foreign investment. The buyer/supplier and horizontal relationships (customers, technology and channels) need to be observed in order to enhance their contributions to the competitiveness of local industries. The Coega IDZ provides a major hope to support the effort to upgrade the local economy. Anchor projects like big firms will provide justification for the development of Coega. It is therefore essential that strong evidence of progress in the development of Coega project be forthcoming, in order to attract more projects.

6.2 EVALUATION OF ARGUMENTS

It is noted in section 2.2 that economic growth is a powerful vehicle to improve living standards. The changes in living standards depend largely on growth of per-capita incomes. Such growth can result from productivity growth. It is therefore critical that production methods be subjected to new technologies in order to render the economy's industries competitive.

The significance of competitive industries in an economy is underpinned by the fact that such industries are able to attract new investments which are directed at industries where high returns are possible. It is for this reason that locational attributes such as relationships between related and supporting companies are important.

There has been a shift in polices from those which focus developmental strategies on individual firms to those that target firms that show interrelatedness. This shift is ascribed to the influence of authors such as Porter (1985, 1990, 1998, and 2000) in his Diamond framework. The main contribution of the Diamond is the way its components, working together, generate capabilities that lead to competitive advantage of relevant industries. Furthermore, nations will be leaders in those industries in which firms are closely located, and thus support one another to become innovative. It was also necessary to see what contributions are derived from authors such Dunning (1995); Weber (1929) and Marshall (1920). These theories highlighted the importance of the concept of external economies in analysing locational factors. Bringing in the role of government in promoting competitive industries showed that government policy has moved beyond achieving macroeconomic stability. It now also focuses on supporting a cluster of industries that are gathered together in order to help them achieve competitiveness (See section 3.3).

The overview of the Metropole's economy is analysed in sections 4.2 to 4.9. It is shown that the region has strong industries such as the automotive industry, which is the backbone of the Eastern Cape Province's economy (see section 4.6). More important is the relationship between the OEMs in the region and the automotive components industry. The components firms are located near to the OEMs in Port Elizabeth and Uitenhage. This bodes well for the development of these industries. It was also necessary to analyse factors such as service infrastructure, developmental indicators and investment trends. The development of factors such as service infrastructure is important, as the Metropole is the biggest in the province and as such its infrastructure must be developed to meet challenges like an influx of work-seekers. Investment trend indicators help to highlight the creation of new resources and new technologies which are

necessary in upgrading productivity levels of the economy. This would meet the challenges such as reducing the wide poverty gap and high unemployment levels, and attract new investments.

Finally, the data for the survey conducted for the research was reported (see section 5. 2). This exercise revealed that, although the Metropole's economy was performing well, measures have to be introduced to upgrade the competitiveness of this economy. For example, relationships between related and supporting firms have to be improved. This would contribute to developing the local market and improve income distribution in the region. In this way, some of the challenges such as high poverty levels can be reduced. It was necessary to use Porter's Diamond to analyse the data of the survey. This had the advantage of exposing areas in which local industries still had space to improve their competitiveness.

6.3 RECOMMENDATIONS

The survey revealed certain weaknesses in the competitive advantage of the Metropole's industries.

6.3.1 Market Development

Most of the firms in the manufacturing sector obtain their raw materials from outside the region (see Appendix Six). The issue of raw materials, particularly in the automotive industry, may be seen as a countrywide phenomenon. However, the firms in the Metropole also obtain their components from the rest of South Africa and abroad. The reason for this trend that was provided in the interviews was that local component suppliers do not meet required standards of quality of components.

It is necessary for the firms and suppliers to co-operate in order to meet one another's expectations. In order to promote export growth, forward and backward linkages must be developed. Efforts to encourage firms to source a bigger percentage of their factor inputs locally will help in building local demand, in order for firms to become internationally competitive.

6.3.2 Inter-Firm Competition

It has been revealed in the survey that most of the Metropole's firms have most of their competitors outside the region. Furthermore, their generally used strategy in competition is price (see Appendix Six, questions 4.1 and 4.3). Again it is advisable for firms to co-operate in order for them to have local rivalry. Such rivalry will encourage the spirit of innovation. Rivalry is more effective when firms are located in close proximity. Once high levels of competition are achieved locally, firms will upgrade their levels of innovation. This will enable these firms to adopt innovations as their most important strategy in competition. This type of strategy is sustainable because of the difficulty of replicating it, as large investment is required for the purpose.

6.3.3 Ranking of Industrial Centres

The Metropole was ranked lower than other centres in the survey in areas such infrastructure, labour quality, and government assistance. (See Appendix Six, question 9). The shortcomings in the provision of infrastructure were also highlighted in the interviews with certain stakeholders in the economy (See Appendix Six).

The development of the Coega Development Zone and Deep Sea Harbour in the metrople is certainly going to boost the local infrastructure, particularly in terms of harbour facilities. However, it is still necessary to improve road and rail transport of goods. The rail links with other industrial centres need to be upgraded. In addition, the capacity of the local airport has to be upgraded to accommodate landing of big aircraft that transport goods.

Although statistics show that the percentage of the region's labour who have tertiary education and those in important employment such as professionals and managers, compares well with the rest of South Africa, the interviews with stakeholders have revealed that the local labour force is of a poor quality. The impression given in the interviews concerning this issue was that it was measured in terms of loyalty and motivation. If that is the case, then the question of developing local markets in order to improve income distribution and reduce income inequalities, may help to motivate labour and create loyalty.

Government assistance was considered to be below that of other big centres (Appendix Six, question 9). This might have been due to government officials having no office in the Metropole. Some lobbying is necessary in order to increase visibility of government in the area. The role of government will be enhanced when officials have first-hand information about the region, and communication between them and local stakeholders will be improved if they have a local office.

Finally, it is important for the local government to ensure that it pursues a national government policy that encourages clusters of industries. It would seem the idea of clustering is being recognised by government. Hence the establishment of the industrial logistics park in Uitenhage. This strategy will facilitate an easy flow of ideas as industries locate in close proximity. This will support efforts to create new technologies that will contribute to enhanced productivity levels.

APPENDIX ONE

DETAILS OF THE MOTOR INDUSTRY DEVELOPMENT PROGRAMME

The Motor Industry Development Programme, (MIDP), introduced in September 1995, aimed to develop an internationally competitive and growing industry that would be able to:

- provide high-quality, affordable vehicles and components to the domestic and international markets;
- provide sustainable employment through increased production; and
- make a greater contribution to the economic growth of the country by increasing production and achieving an improved sectoral trade balance.

It deviated from the previous programmes as no local content requirements were set.

These national objectives were to be achieved by:

- encouraging a phased integration into the global automotive industry;
- increasing the volume and scale of production by the expansion of exports and gradual rationalisation of models produced domestically; and
- encouraging the modernisation and upgrading of the automotive industry in order to promote higher productivity and facilitate the global integration process.

The major policy instruments to achieve these objectives have been:

- a gradual and continuous reduction in tariff protection so as to expose the industry to greater international competition;
- the encouragement of higher volumes and a greater degree of specialisation by allowing exporting firms to earn rebates of automotive import duties; and
- the introduction of a range of incentives designed to upgrade the capacity of the industry in all spheres.

The MIDP has now been in operation for eight years. It has successfully helped to guide the automotive industry's integrated emergence from isolation, helping it to become a global source exporting high-technology and quality automotive products to demanding world markets.

The MIDP has been extended until 2012 in view of the following aims:

- to maintain and enhance the South African industry's attractiveness as a foreign investment destination and production base for exporting completely built-up vehicles and components;
- to maintain the momentum of exports; and
- to secure the continued viability of domestic vehicle and component manufacture.

It is significant to note that the constructive way in which industry and government co-operate to maximise the contribution of this key sector to the South African economy is increasingly being used as a benchmark for other sectors.

Rates of import duties

Light commercial vehicles imported from the EU qualify for a 5% duty preference and will attract a 33% import duty in 2003. The import duty on medium and heavy commercial vehicles has been set at 20% *ad valorem*. All the components for these vehicles, with the exception of tyres, which attract a 15% import duty, can be imported free of duty. The EU will benefit from the 5% preference or a duty of 15% *ad valorem*. It is important to note that the gradual phasing down of the tariff is taking place faster than the rate dictated by South Africa's obligation to the World Trade Organisation (WTO), which determined a rate of 50% *ad valorem* on CBUs and 30% *ad valorem* on components.

APPENDIX TWO

DETAILS OF URBAN RENEWAL PROGRAMME

MOTHERWELL URBAN RENEWAL PROJECT

The Motherwell Urban Renewal Project capital expenditure is about R1 billion. The project, currently in implementation, will span from 2001-2007. The budget for local economic development and job creation is more than R100 million. Major economic projects include the following:

- Construction of the Motherwell Small Business Centre.
- Construction of the Motherwell Job Placement Centre.
- Creation of additional Informal Trading Markets.
- Construction of the Motherwell Cultural Village.
- Construction of the Motherwell-Addo Tourism Village.
- Redevelopment of the Markman Industrial Node (as an alternative investment area).
- Implementation of the Urban Agriculture Programme.

Major expenditure will be focused on building bulk infrastructure, roads, housing and improvement of living standards for youth, women and the ageing.

Implications

The construction phases of these projects and the installation of bulk infrastructure and housing are expected to create more than 5 000 direct jobs, mainly to be channelled to residents of Motherwell. This programme will result in the creation of a new investor business and tourist appeal in Motherwell and will thus further position this sub-region to benefit form spin-offs created by the Coega IDZ.

APPENDIX THREE

DETAILS OF REGISTERED BUSINESS AND TOP COMPANIES IN THE NELSON MANDELA METROPOLE

According to the Nelson Mandela Metropolitan Municipality, the following businesses were registered.
The sectoral breakdown for 2004 is as follows:

Accommodation sector (hotels, crèches, old age homes, etc.) – 170
Agriculture (co-ops, suppliers, etc.) – 43
Body Corporates and Controlling Bodies – 292
Banking institutions (Building Soc, etc.) – 58
Bookkeeping, business consultants, audit – 725
Business services (dry cleaners, electrical) – 1855
Car dealers (buying and selling) – 1134
Clothing manufacturers and distributors (clothing and shoes) – 306
Computer sales, services and training – 402
Construction – 1321
Dairies – 12
Estate agents – 477
Education (driving schools, schools, etc.) – 243
Electricity, gas and water distributors – 220
Engineering services – 629
Fishing enterprises – 87
Furniture shops and manufacturers – 205
Farmers (hunting, farming, breeding, etc.) – 274
Local Authorities 4
Letting and Letting companies – 1262
Liquor distribution outlets – 145
Legal practices – 154
Motor industry – 428
Medical suppliers (chemist, manufacturer) – 281
Medical services (doctor, optometrists, etc) – 353
Meat industries (abattoir, butchery, etc.) – 137
Nurseries, florist, garden services – 135
Pets (pet boutiques, kennels, pet shops) – 41
Pension, Medical Aid Funds, Trade Unions – 69
Petrol and oil companies – 46
Quarrying and mining – 14
Retail business (other) – 1638
Stationers and bookshops – 254
Security, private investigators – 174
Supermarkets, fruit & vegetables – 385
Social & personal services (hair dressing, etc.) – 1304

Government institutions – 41
Hardware, building supplies, etc. – 157
Hospitals – 11
Insurance (long- and short-term) brokers – 178
Sport and recreational clubs (incl. bars) – 62
Service stations – 63
Transport (general cartage & car rentals) – 431
Taxi and passenger transport – 280
Workshops (only), panelbeaters, spare parts – 535
Wholesalers – 163

Top companies within the Nelson Mandela Metropolitan Municipality based on employee strength (in alphabetical order):

Aberdare Cables (Pty) Ltd
Absa Bank
ADT Security (Pty) Ltd
Algoa Bus Company
Afrox Limited
Armstrong Hydraulics SA (Pty) Ltd
Aspen Pharmacare Ltd
Bagshaw Footwear
Barloworld Plascon Automotive
Bel-Essex Corporation
Bodene (Pty) Ltd
Boeremakelaars Ko-op Beperk (BKB)
Borbet Group
Bridgestone Firestone (Pty) Ltd
Cadbury (Pty) Ltd
Coca-Cola Fortune (Pty) Ltd
Comau South Africa (Pty) Ltd
Continental Tyre SA (Pty) Ltd
Dorbyl Automotive Technologies
Eveready (Pty) Ltd
Johnnic Publishing EC
LuK Afrika (Pty) Ltd
Mondi Packaging Ltd
Murray & Roberts (Pty) Ltd
Nadkim Clothing cc
National Ports Authority of SA
Nedbank Retail Banking
Nelson Mandela Metro Municipality
Nelson Mandela Metropolitan University
Parmalat Bonnita (Pty) Ltd
Pick ‘n Pay Wholesalers
SA Breweries Ltd
SAI Automotive Autoplastic (Pty) Ltd
Sappi Fine Papers (Pty) Ltd
Sasko
Shatterprufe (Pty) Ltd
Securicor Gray SA (Pty) Ltd
SKF Uitenhage
Spar Group
Spicer Axle SA

Eyethu Fishing (Pty) Ltd
First National Bank
Ford Motor Company of SA
Formex Engineering (Pty) Ltd
Gemtec
General Motors South Africa (Pty) Ltd
Goodyear SA (Pty) Ltd
Hella SA (Pty) Ltd
Industex Holdings (Pty) Ltd
Johnson Controls (Pty) Ltd
Spoornet
Standard Bank of SA ltd
Telkom SA Ltd
The Boardwalk Casino & Entertainment World
Union Spinning Mills (Pty) Ltd
Volkswagen of South Africa (Pty) Ltd
Walton EJ Packaging (Pty) Ltd
Welfit Oddy (Pty) Ltd
Willard Batteries (Pty) Ltd
Xmeco Group

APPENDIX FOUR

QUESTIONNAIRE ON THE NELSON MANDELA METROPOLE

1 GENERAL BACKGROUND

In what part of the Metropole is your operation situated?

i. Port Elizabeth
ii. Uitenhage
iii. Despatch

1.2 What is the size of your labour force?

i. 0-500
ii. 500-999
iii. 1000-1499
iv. 1500-2000
v. over 2000

1.3 What is your firm's annual turnover?

i. R100 m
ii. R100 m-R200 m
iii. R200 m-R300 m
iv. R300 m-R400 m
v. R400 m-R500 m
vi. over R500 m

1.4 What is the ownership structure of your firm?

i. Wholly locally owned
ii. Subsidiary of local company
iii. Joint venture with foreign corporation
iv. Subsidiary of foreign multinational corporation

2 RELATIONSHIPS WITH SUPPLIERS

2.1 Location of suppliers: What percentage of inputs do you obtain from the following areas?

LOCATION AVAILABLE

Type of input	local	national	abroad	In quantity requested		In quality requested	
				Yes	No	Yes	No
i Raw materials							
(a)							
(b)							
ii Components							
(c)							
(d)							
(e)							
iii Machines							
(f) new							
(g) second-hand							

2.2 Have your suppliers approached you to:

i. offer assistance with problems arising from their products?

YES NO

ii. ask for suggestions on how to improve their products?

YES NO

iii. explain the characteristics of their new products?

YES NO

iv. other purpose? (specify)

YES NO

2.3 Are there any associations/bodies which have helped improve relations between your firm and suppliers?

YES NO

If yes, specify

3 MARKET

3.1 To whom do you sell your products as a percentage of total sales?

i. direct to domestic markets
ii. direct to foreign dealers
iii. through a consortium with other manufacturers
iv. other (specify)

3.2 Where are the outlets at which your products can be bought? Give answer as percentage of total sales.

i. Nelson Mandela Metropole
ii. Rest of the Eastern Cape
iii. Rest of the Republic of South Africa
iv. Abroad

3.3 Are there any mechanisms which help to create a better understanding of customer needs and market opportunities in the Nelson Mandela Metropole?

YES NO

If yes, specify _____.

4 INTER-FIRM COMPETITION

4.1 Where are your main competitors located?

i Nelson Mandela Metropole
ii Rest of the Eastern Cape
iii Rest of the Republic of South Africa
iv Abroad

4.2 Are your main competitors

i. large enterprises?
ii. medium enterprises?
iii. small enterprises?

4.3 What would you consider as the three main strategies to out-compete your rivals (in order of importance?

i. Price
ii. Quality
iii. New designs
iv. Delivery

5 INTER-FIRM CO-OPERATION

5.1 Do you have any formal arrangements with other firms?

YES NO

If yes, specify _____

5.2 How does your informal relationship with other firms usually come about?

i. family ties
ii. neighbours or spatial proximity
iii. friends or former colleagues from courses or work
iv. industry associations
v. other, specify _____

5.3 Do you co-operate with other local producers in your industry in the following ways? (yes/no)

i. lending machinery
ii. product development
iii. marketing
iv. training workers
v. purchase of inputs
vi. transport of inputs and products

vii. other (specify)_____

5.4 Do you exchange ideas or discuss problems/strategies with other local firms in your industry?

i Never ii occasionally iii often

6 INDUSTRY ASSOCIATION

6.1 Does your firm belong to an industry association?

YES NO

If yes, specify _____

6.2 Do you use the association for

SERVICE USED	NEVER	OCCASIONALLY	OFTEN
Advice in legal regulatory matter			
Information on other enterprises			
Courses and seminars			
Information Bulletins			
Other (specify)			

6.3 Did any of the industry associations provide leadership within your industry?

YES NO

If yes, specify

7 VIEWS ON INDUSTRY ASSOCIATION

7.1 What is your perception of the benefits of the industry association that have accrued to your firm?

i. It has resulted in technology transfers
ii. It has led to increased exports
iii. It has resulted in an increase in turnover
iv. It has led to an increase in labour productivity
v. It has resulted in increased employment
vi. It has lowered inter-firm transaction costs by eliminating bottlenecks and cost drivers

vii. Other (specify) _____.

8 GOVERNMENT POLICY

8.1 Was government's active participation and commitment forthcoming in the industry initiative?

YES NO

8.2 Did the industry initiative manage to give information about and access to Department of Trade and Industry assistance and incentives?

YES NO

8.3 What government policies would have contributed most to raising the effectiveness of the industry initiative?

i. Greater macro-economic stability
ii. Export Incentives
iii. Improved regional infrastructure
iv. More and better training
v. Improvement in basic education

9 Give an overall rating of Nelson Mandela Metropole; Cape Town; Durban; East London and Gauteng on a scale of 1-10 as attractive centres for industrial location on the following. (1 is the top rating and 10 is the lowest rating)

	Nelson Mandela Metropole	East London	Durban	Cape Town	Gauteng
(i) General infrastructure					
(ii) Level and quality of labour force					
(iii) Supporting industries					
(iv) National Government support					
(v) Local Government support					
(vi)Location to access international markets					
(vii)Location to access national markets					

10 Any other comments which you feel might be of value to the research?

_____

_____

_____

_____

_____

_____

_____

_____

THANK YOU FOR HAVING TAKEN THE TIME TO FILL OUT THE QUESTIONNAIRE

Please return to: Mr Philile Nonxuba

Rhodes University

Department of Economics

P.O. Box 22390

Port Elizabeth

6000

Cell 0835306079

APPENDIX FIVE

LIST OF INTERVIEWEES FOR THE RESEARCH

NAME	ORGANISATION
1. ALFRED DA COSTA	PORT ELIZABETH REGIONAL CHAMBER OF COMMERCE AND INDUSTRY
2. DEON ENGELKE	INKANYEZI, MARKETING CONSULTING
3. YASVIN GAJJAR	NATIONAL PORTS AUTHORITY
4. LESTER GOLDMAN	COMMUNITY SELF-EMPLOYMENT CENTRE (COMSEC)
5. MCEBISI JONAS	EAST CAPE DEVELOPMENT CORPORATION
6. PAPAMA JONAS	COEGA DEVELOPMENT CORPORATION
7. KUTLOANO HEADBUSH	PRESIDENT, PORT ELIZABETH AFRICAN FEDERATED CHAMBER OF COMMERCE
8. BRENDON LOUW	FORD MOTOR COMPANY

9. ROSHAN MAKAN	PORT ELIZABETH REGIONAL CHAMBER OF COMMERCE AND INDUSTRY. THE BLACK ECONOMIC EMPOWERMENT (BEE) UNIT.
10. MONDE MAQULA	PORT ELIZABETH REGIONAL DEPARTMENT OF ECONOMIC AFFAIRS AND ENVIRONMENT
11. WAYNE OOSTHUIZEN	EASTERN CAPE MANUFACTURING ADVISORY CENTRE
12. CHARLES DU TOIT	EVEREADY SOUTH AFRICA
13. NEIL TROLLIP	CSIR
14. VUYELWA QINGA-VIKA	COEGA DEVELOPMENT COROPORATION
15. RICKY WEDDERBURN	WELFIT ODDY (PTY) LTD
16. RENN WERTH	PORT ELIZABETH TOURISM
17. VUYO ZITUMANE	NELSON MANDELA METROPOLITAN MUNICIPALITY DEVELOPMENT UNIT

APPENDIX SIX

Analysis of questionnaire responses from manufacturing enterprises in the Nelson Mandela Metropole.

Questions	Reponses (Percentage of respondents shown in brackets)
1 GENERAL BACKGROUND In what part of the Metropole is your operation situated?	Port Elizabeth (85) Uitenhage (15) Despatch
1.2 What is the size of your labour force?	0-500 (79) 500-1000 (12) 1000-1500 (5) 1500-2000 (4) over 2000
1.3 What is your firm's annual turnover?	0-R100 m (77) R100 m-R200 m (7) R200 m-R300 m (6) R300 m-R400 m (3) R400 m-R500 m (4) over R500 m
1.4 What is the ownership structure of your firm?	(i) Wholly locally owned (81) (ii) Subsidiary of local company (7) (iii) Joint venture with foreign corporation (2) (iv) Subsidiary of foreign multinational corporation (10)
RELATIONSHIPS WITH SUPPLIERS	LOCATION AVAILABLE

Location of suppliers: What percentage of inputs do you obtain from the following areas?

Type of input	local	national	abroad	In quantity requested	In quality requested
				Yes No	Yes No
(i) Raw materials	4%	25%	71%	98 (NR)	96 (NR)
(a)					
(b)					
(ii) Components	5%	34%	61% (98)	(97) (NR)	(86) (NR)
(c)					
(d)					
(e)					
(iii) Machines					
(f) new	NIL	24	76 (98)	(97) (NR)	(97) (NR)
(g) second-hand	NR	NR	NR	NR	NR

2.2 Have your suppliers approached you to:

offer assistance with problems arising from their products? Yes 74 No (26)

ask for suggestions on how to improve their products? Yes (65) No (35)

explain the characteristics of their new other purpose? (specify) *Yes NR No NR

2.3 Are there any associations/bodies which have helped improve relations between your firm and suppliers?	Yes (66) No NR (16) If yes (specify) PERCCI and profession bodies *No Responses
3 MARKET To whom do you sell your products as a percentage of total sales?	direct to domestic markets 95,6% (65) direct to foreign dealers 91% (35) through a consortium with other manufacturers (NR) other (specify) (NR)
Where are the outlets at which your products can be bought? Give answer as percentage of total sales.	Nelson Mandela Metropole 7% (46) rest of the Eastern Cape 11% (85) rest of the Republic of South Africa 62% (85) abroad 67% (6)
Are there any mechanisms which help to create a better understanding of customer needs and market opportunities in the Nelson Mandela Metropole?	Yes(31) No(52) NR (17) If yes (specify) See Analysis
INTER-FIRM COMPETITION Where are your main competitors located?	Nelson Mandela Metropole (27) rest of the Eastern Cape (11)

	rest of the Republic of South Africa (41) abroad (21)
Are your main competitors	large enterprises (55) medium enterprises (9) small enterprises (36)
What would you consider as the three main strategies to out-compete your rivals (in order of importance)?	Price (86) Quality (91) New designs (21) Delivery (78)
INTER-FIRM COOPERATION 5.1 Do you have any formal arrangements with other firms?	Yes (19) No (79) NR (2) If yes, specify See Analysis
5.2 How does your informal relationship with other firms usually come about?	family ties (17) neighbours or spatial proximity (11) friends or former colleagues from courses or work (73) industry associations (62) other, specify (NR)
.3 Do you co-operate with other local producers in your industry in the following ways? (yes/no)	lending machinery NR product development (41 YES) marketing (73 YES) training workers (47 YES) purchase of inputs (69 YES) transport of inputs and products (81)

<table>
<tr><td></td><td>other (specify) (NR)</td></tr>
<tr><td>5.4 Do you exchange ideas or discuss problems/strategies with other local firms in your industry?</td><td>(i) Never NR (ii) occasionally (91) (iii) often NR</td></tr>
<tr><td>6 INDUSTRY ASSOCIATION
6.1 Does your firm belong to an industry association?</td><td>Yes (95) No NR (5)

If yes (specify) See Analysis</td></tr>
<tr><td>6.2 Do you use the association for?</td><td>
<table>
<tr><td>SERVICE USED</td><td>NEVER</td><td>OCCASSIONALLY</td><td>OFTEN</td></tr>
<tr><td>Advice in legal regulatory matter</td><td></td><td>(87)</td><td></td></tr>
<tr><td>Information on other enterprises</td><td></td><td>(91)</td><td></td></tr>
<tr><td>Courses and seminars</td><td></td><td></td><td>(71)</td></tr>
<tr><td>Information Bulletins</td><td></td><td></td><td>(96)</td></tr>
<tr><td>Other (specify)</td><td>NR</td><td>NR</td><td>NR</td></tr>
</table>
</td></tr>
<tr><td>6.3 Did any of the industry associations provide leadership within your industry?</td><td>Yes (31) No 57 NR(12)
If yes (specify) See Analysis</td></tr>
<tr><td>7 VIEWS ON INDUSTRY ASSOCIATION
7.1 What is your perception of the benefits of the industry association</td><td></td></tr>
</table>

that have accrued to your firm?	It has resulted in technology transfers (11) It has led to increased exports (NR) It has resulted in an increase in turnover (3) It has led to an increase in labour productivity (15) It has resulted in increased employment (NR) It has lowered inter-firm transaction costs by eliminating bottlenecks and cost drivers (21) Other (specify) See Analysis
8 GOVERNMENT POLICY 8.1 Was government's active participation and commitment forthcoming in the industry initiative? 8.2 Did the industry initiative manage to give information about and access to Department of Trade and Industry assistance and incentives? 8.3 What government policies would have contributed most to raising the effectiveness of the industry initiative?	Yes (33) No (46) NR (21) Yes (16) No (21) NR (63) Greater macro-economic stability (33) Export Incentives (86) Improved regional infrastructure (59) More and better training (61) Improvement in basic education (31)

9 Give an overall rating of Nelson Mandela Metropole; Cape Town; Durban; East London and Gauteng on a scale of 1-10 as attractive centres for industrial location on the following. (1is the top rating and 10 is the lowest rating)		Nelson Mandela Metropole	East London	Durban	Cape Town	Gauteng
	(i) General infrastructure	6 (91)	7 (34)	2 (37)	2 (37)	2 (11)
	(ii) Level and quality of labour force	4 (91)	4 (34)	3 (37)	3 (37)	2 (11)
	(iii) Supporting industries	3 (91)	3 (34)	2 (37)	2 (37)	2 (11)
	(iv) National Government support	7 (91)	6 (34)	7 (37)	5 (37)	5 (11)
	(v) Local Government support	6 (91)	7 (34)	6 (37)	5 (37)	5 (11)
	(vi)Location to access international markets	1 (91)	1 (34)	1 (37)	1 (37)	3 (11)
	(vii)Location to access national markets	1 (91)	1 (34)	1 (37)	1 (37)	3 (11)

REFERENCES

AUTOMOTIVE INDUSTRY DEVELOPMENT CENTRE (AIDC). 2004. *Anchoring the Automotive Industry in South Africa*. Media Release 8.11.2004. http://www.csir.co.za

BARNES, J. 1998. *Competing in the global economy, the competitive advantage of the South African Components industry*. Paper presented during the second Trade and Industries Policy Secretariat (TIPS) Conference, Johannesburg, 20-30 September.

BERGMAN, E. M., and FESER, E. J., 1999. *Industrial and regional clusters: concepts and comparative applications* [online]. Available: http://www.rri.wvu.edu/WebBook/Bergman-Feser.htm. [Accessed 22 October 2004]

BLACK, P. and SAXBY, G. 1996. "Impact assessment report: Economic Effects". *Proposed Eastern Cape Zinc Refinery and Associated Phosphoric Acid Plant: Supplementary Report Vol. 2.*African Environmental Solutions (Pty) Ltd, Kenilworth, South Africa.

BUSINESS MAP, 2001. *Regional Investor Survey 2001. Opportunities in Waiting.* Houghton Estate, Johannesburg. A Business Map SA report published by Business Map SA in November, 2001, Houghton Estate, Johannesburg.

CAPELLI, P. and ROGOOSKY, N. 1994. *"New Work Systems and Skill Requirements"*. Forum for Development Studies, 2, 175-185.

CHRISTOPHER, A. 1999. *The People-Demography Port Elizabeth and Uitenhage Metropole Socio-Economic Monitor*. Institute for Social and Systemic Change. University of Port Elizabeth. Page 3-7.

CLARK, A. and LAYARD, R. 1989. *UK Unemployment*. Cambridge University Press, Cambridge.

DANIELSON, R.R. (IR) 1988. *"Formulation of a Strategy for Dutch Cut-Flower Exports to the United States*. Unpublished Master's Thesis, Nijenrode, The Netherlands, February.

DEPARTMENT OF ECONOMIC AFFAIRS, ENVIROMENT AND TOURISM (DEAT), 2000. *Cluster Programme.* Director: Policy Planning, Bisho. Memorandum, 4 July.

DEPARTMENT OF TRADE AND INDUSTRY (DTI). 2002. *Accelerating Growth and Development: The Contribution of the Integrated Manufacturing Strategy*. External Relations and Policy Coordination, DTI: Pretoria.

DOMAR, E. 1947. *The problem of Capital Accumulation.* American Economic Review, 37 March, page 34-55.

DORNBUSCH, R, FISCHER, S. and STARTZ, R. 1999. *Macroeconomics* (7th. ed.). McGraw-Hill: New York.

DUNNING, J. H., 1995. *Reappraising the eclectic paradigm in an age of alliance capitalism.* Journal of International Business Studies. 3rd Quarter, 461-476.

DUNNING, J. H., 1997. *Governments, globalisation, and international business.* Oxford University Press Inc: New York.

DYSON, T. 1996. *Population and Food: Global Trends and Future Prospects.* Routledge, London

EASTERN CAPE GATEWAY, 2000. *The Motor Manufacturing Industry in the Eastern Cape*. Eastern Cape Gateway, Port Elizabeth.

EASTERN CAPE SOCIO-ECONOMIC CONSULTATIVE COUNCIL (ECSECC). 2005. *Nelson Mandela Metropole.* Unpublished report for the Eastern Cape Province Government, Bisho.

EDWARDS, I.E. (Ed). 1974. *Employment in Developing Nations*. Columbia University Press, New York.

EDWARDS, C. 2003. *Growth and Development in the Eastern Cape – 2002 to 2014 – baseline and Constraints*. Unpublished report for the Eastern Cape Province Government, Bisho.

FOUNTAIN, J. E., 1997. *Social capital: a key enabler of innovation* [online]. Available: http://www.business-clusters.com/html/about.html. [Accessed 17 August 2004]

GALBRAITH, J.K. 1962. *Economic Development in Perspective.* Harvard University Press, Cambridge, Massachusetts.

HARROD, R. 1939. *An Essay in Dynamic Theory*. Economic Journal, March, page 14-33.

HANSEN,2000.Industrial Cluster[online]. Available: http:/www.narc.org/ed/articles/clusstr.html [Accessed 17 August 2004]

HORN, G. 2003. *The Eastern Cape Automotive Cluster: A Key sector for Regional Economic Growth and Development.* Port Elizabeth Technikon

HOSKING, S. and LLOYD, H. 1999. *The Economy Port Elizabeth and Uitenhage Metropole Socio-Economic Profile*. Institute for Social and Systemic Change, University of Port Elizabeth. Page 21-44.

INDUSTRIAL DEVELOPMENT CORPORATION (IDC), 1996. Measures and Policies impacting on South Africa. IDC Information, Johannesburg.

ISARD, W. 1960. *Methods of regional analysis: An introduction to regional science*. The Technology Press of the Massachusetts Institute of Technology. John Wiley and Sons Inc., New York, USA.

JOINT VENTURE SILICON VALLEY, 1993. *Blueprint for the 21st century* [online]. Available: http://wwwjointventure. Org/resources/publications/blueprint.html. [Accessed 17 August, 2004]

JONES, C. I. 1998. *Introduction to Economic Growth*. London: W.W. Norton and Company Ltd; London

KENNEY, M., and Von BURG, U., 2000. *Institutions and economies: creating Silicon Valley* [online]. Available: http;//www.hcd.uc.davis.edu/faculty/Kenney/creativesv.html. [Accessed 23 August 2004]

KIM, L. 1997. *From Imitation to Innovation: Dynamics of Korea's Technological Learning*. Harvard Business School Press, Cambridge.

KIM, L. and NELSON, R.R. (Ed) 2000. *Technology, Learning and Innovation. Experiences of Newly Industrialising Economies*. Cambridge University Press, Cambridge, UK.

KRUGMAN, P., 1991. Increasing returns and economic geography. *Journal of Political Economy*. 99, 3:483-499.

LALL, S. 1992. *"Technological Capabilities and Industrialisation"*. World Development, 20, (2) 165-183.

LALL, S. 1994. *Industrial Policy: The Role of Government in Promoting Industrial and Technological Development*. In UNCTAD Review 1994, UNCTAD, USA.

LALL, S. and RAO, K. 1995. *Indonesia: Sustaining Manufactured Export Growth*. Study Prepared for the Asian Development Bank, Manila.

LALL, S. 1996. *Learning from the Asian Tigers: Studies in Technology and Industrial Policy*. Macmillan, London.

LEVIN, M., ERASMUS, J. and LLOYD, H.R. 1992. *The Population and the Economy of the Greater Algoa Bay Area*. Research Report No. 38, 2nd print. Employment Research Unit, Vista University, Port Elizabeth.

LIPSEY, G, COURANT, P. and RAGAN, C. 1999. *Economics* (12th ed.) Massachusetts: Addison-Wesley Longman.

LUCAS, R. 1988. *On the mechanics of Economic Development*. Journal of Monetary Economics, Vol. 22.

LYDALL, H. 1998. *A Critique of Orthodox Economics – An Alternative Model*. Macmillan Press Limited, London.

MAKUWAZA, G.C. 2001. *Clustering as a tool for Manufacturing Performance in the Eastern Cape Automotive Industry*. Unpublished Master of Commerce thesis, Rhodes University, Grahamstown.

MALTHUS, T. 1798. *Essay on the Principle of Population*. London: Penguin.

MANKIW, N.G. 2003. *Macroeconomics* (5th ed). New York: World Publishers.

MARSHALL, A., 1920. *Principles of Economics: An introductory volume (1e)*. Macmillan: London.

MARX, K. 1867. *Capital: A Critique of Political Economy, Vol. 1*. International Publishers, 1967, New York.

MEADE, J.E. 1963. *A Neoclassical Theory of Economic Growth*. Oxford University Press, New York.

METCALFE, J. 1995. *Technology Systems and Technology Policy in an Evolutionary Framework*. Cambridge Journal of Economics 19. Page 25-46.

MEYER-STAMER, J., 1996. *Dynamism and slow adaptation: the software industry in Santa Catarina Brazil* [online]. Available: http://wwwwbs.cs.tu-berlin.de/user/jms/1996/sw-sc.html. [Accessed 22 August, 2004]

MOHR, P.1998. *Economic Indicators*. University of South Africa, Pretoria

MULLINS, E.N. 1994. *Regional Economic Development Forum: Eastern Cape. An Overview of Development Issues*. Research Report No. 51, May. Institute of Planning Research, University of Port Elizabeth.

MUTAMBARA, T.E. 2004. *The Nature and Potential of Industrial Development within the Southern African Development Community (SADC) and the Facilitating Role of Trade Liberalisation and Foreign Direct Investment in Selected Countries.* Unpublished Doctor of Philosophy thesis. Rhodes University, Grahamstown

NAFZIGER, E.W. 1997. *The Economics of Developing Countries* (3rd ed). New Jersey: Prentice-Hall International, Inc., New Jersey, USA

NATIONAL PORTS AUTHORITY, 2005. *Terminal Performance.* Report by SA Port Operations 2004/2005 year.

NATTRASS, N. 1997. *Macroeconomics – Theory and Policy in South Africa*. David Philip, Cape Town.

NEL, E. 1994. *Industrial Development and Spatial Planning Related to the Coega IDZ.*

NELSON MANDELA METROPOLITAN MUNICIPALITY. 2004. *2020 Citywide Economic Development Strategy for NMMM.* Port Elizabeth. [Unpublished report for the Nelson Mandela Municipality, page 1-25]

NELSON, R. R. (ed.). 1993. *National Innovation Systems: A Comparative Analysis*. Oxford University Press Inc: New York.

NORTON, R. D., 1999. *The geography of the new economy* [online]. Available: http://www.rri.wvu.edu/edu/WebBook/Norton/sectionc.htm. [Accessed 23 August 2004.]

PACK, H. 1994. Endogenous Growth Theory: Intellectual Appeal and Empirical Shortcomings. *Journal of Economic Prospectives* 8 (Winter) page 55-72.

PACK, H and WESTPHAL, E. 1986. Industrial Strategy and Technological change: Theory versus Reality. *Journal of Development Economics* 22. (1) Page 87-128.

PAKES, T. and NEL, H. 1997. *Overview of the Port Elizabeth Economy*. The Institute for Development and Research, University of Port Elizabeth. (Report NO. 1)

PORT ELIZABETH REGIONAL CHAMBER OF COMMERCE AND INDUSTRY (PERCCI). 2005. *Business Guide*. Port Elizabeth. (Pages 1-69)

PORTER, M.E. 1985. Competitive Strategy. Free Press, New York.

PORTER, M.E. 1990. *The Competitive Advantage of Nations*. The Free Press, America.

PORTER, M. E., 1998. *The Competitive Aadvantage of Nations* (10e). Macmillan Press, London.

PORTER, M. E., 2000. *Location competition and economic development: local clusters in a global economy* [online]. Available: http://ehostvgw12...00000003&hit Num.5&booleanTerm=&fuzzyTerm=. [Accessed 10 October 2004]

PRESIDENTIAL COMMISION, 1996. *Restructuring the South African Labour Market*. Directorate of Communication. Department of Labour, Pretoria.

PROVINCE OF THE EASTERN CAPE. 2004. *Strategy Framework for Growth and Development 2004 – 2014*.Government, Bisho. (Unpublished report page 1-39)

RESPONSE GROUP TRENDLINE 2005: *Query Results – New Vehicle Sales.* Report to the Nelson Mandela Metropolitan Municipality, 25-10-2005.

RICARDO, D. 1817. *Principles of Political Economy and Taxation*. Everyman, 1992, London.

RODRIK, D. 1996. *"Coordination Failures and Government Policy: A Model with Application to East Asia and Eastern Europe"*. Journal of International Economics, 40, 1. Page 1-22

ROUX, A. 1991. *Options for employment creation in redistribution – how it works in South Africa* in Moll, P., Nattrass, N. and Loots, L.J. David Philip (Pty) Ltd, Claremont, Cape Town, pp 101-117.

ROMER, P.M. 1990. Endogenous Technical Change. *Journal of Political Economics 98*, s71-s102

ROMER, P.M. 1993. Two Strategies for Economic Development: Using Ideas and Producing Ideas. In: *Proceedings of the World Bank Annual Conference on Development Economics*, 1992. Washington, D.C.: World Bank.

SAXENIAN, A., 1994. *Regional advantage: Culture and competition in Silicon Valley and Route 128.* Harvard University Press, Harvard.

SCHMITZ, H. 1984. *Industrialisation strategies in less developed countries: Some lessons of historical experience.* Journal of Development Studies. 21, 1: 1-20.

SEN, A. 1999. *Poverty and Famines: An Essay in Entitlement and Deprivation*. Clarendon Press, Oxford.

SHAPIRO, H. and TAYLOR, L. 1990. *"The State and Industrial Strategy".* World Development, 18(6), 861-873.

SOLOW, R.M. 1956. *A Contribution to the Theory of Economic Growth*. Quarterly Journal of Economics, February, page 65-94.

SOLOW, R.M. 1957. *"Technical Change and the Aggregate Production Function".* Review of Economics and Statistics, 39, 312-319.

STIGLITZ, J.E. 1996. "*Some Lessons from the East Asian Miracle*". The World Bank Research Observer, 11, 151-170.

STIGLITZ, J.E. and Uy, M. 1996. "*Financial Markets, Public Policy and the East Asian Miracle".* The World Bank Research Observer, 11, 249-269.

STONIER, A. and HAGUE, D. 1975. *A Textbook of Economic Theory (4e).* Longman Group Ltd, London.

STRATEGIC FACILITATION GROUP, 1993. *Economic Perspective and Development Opportunities in the Port Elizabeth region*. Port Elizabeth Municipality, May.

STREETEN, P. 1993. *Markets and States: Against Minimalism*. World Development 12, page 1281-1298.

SINGH, A. 1979. *The Basic Needs Approach to Development vs the New International Economic Order: The Significance of Third World Industrialisation*. World Development, June page 116-151.

SMITH, A. 1776. *An Inquiry into the Nature and causes of the Wealth of Nations.* London: Strahan and Caddell.

STATISTICS SOUTH AFRICA 2003. Census 2001 (Census in brief). Statistics South Africa. Pretoria

THIRLWALL, A.P. 2003. *Growth and development – with special reference to developing economies (7e).* Press Ltd Macmillan. New York, USA

TODARO, M.P. 2003. *Economic Development (7e).*Addison-Wesley Publishing Company, New York, USA.

WEBER, A., 1929. *Theory of location of industries.* The University of Chicago Press, Chicago.

WEEKS, J. 1999. *Stuck in low GEAR? Macroeconomic Policy in South Africa 1996 – 1998*. Cambridge Journal of Economics, Vol. 23. Page 79-116

WEISS, J. 1988. *Industry in Developing Countries. Theory, Policy and evidence*. Croom Helm Ltd, London

WORLD BANK. 1995. *World Development Report(1995): Workers in an Integrating World.* Oxford University Press Inc: New York.

WORLD BANK. 2000. *World Bank Report 2000/2001: Attacking Poverty.* Oxford University Press. New York. USA

WORLD BANK. 2005. *World Development Report 2004* (Washington, DC: World Bank). Page 249-263

XAVIER, C. 1994. *Southern African Perspectives*. Centre for Southern African Studies, University of the Western Cape, Cape Town.