

**THE EXPORT POTENTIAL OF SOUTH AFRICAN EDIBLE NUTS: THE SPECIAL
CASE OF MACADAMIA NUTS TO GERMANY**

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ABSTRACT

One of the top priorities of the South African government is to maintain and enhance economic growth. The South African government is seeking to achieve this by implementing export-led growth policies. In many exporting economies, resources are scarce and often export promotion institutions face the double allocation problem. The double allocation problem implies that export promotion institutions face the difficulty of having to allocate scarce resources efficiently (Cuyvers, De Pelsmaker, Rayp & Roozen, 1995). The apportionment of financial resources is among several export promotion instruments that can be used to attain export success.

In 2005, the Department of Trade and Industry (the dti), as the trade promotion organisation in South Africa, expressed the need for a scientific study on the realistic export opportunities in products and markets. This would enable decision-makers to scientifically justify the allocation of public resources to promote products with the highest potential earnings. A Decision Support Model (DSM) designed by Cuyvers (1995) was applied to the South African economy (in a study done by Viviers & Pearson (2007)) to identify priority products with high export potential in new and / or existing markets. The DSM identified the product group, under the Standard International Trade Classification (SITC), SITC 0577 as the twenty-second product with the most realistic export opportunities. SITC 0577 was identified as having thirty-six potential export destinations.

This study evaluated each of the fifteen product categories corresponding to SITC 0577 on an HS level, to determine the product with the most potential for export success for the South African economy. This was achieved by employing a quantitative approach to construct a composite index. The composite export potential index comprised three sub-indices: South Africa's export performance index, the world markets index and the production index. Based on an export potential index score of 4.16, macadamia nuts, classified under nuts not else specified (nes), were identified as the product with the highest potential for export success.

Once the product with the highest export potential had been identified, trade and market access statistics were analysed to determine a target market with the highest import potential for South African macadamia nuts. Germany was selected from a group potential target markets as the target market for South African macadamia nuts based on an

analysis of market size, growth trends, share in the world market trade, and market accessibility. Thereafter, a survey was conducted through unstructured telephone interviews and from secondary sources of information. The survey determined the market entry requirements, consumption trends and price information for South African exporters of macadamia nuts to Germany. This information was compiled into a market profile to provide exporters of macadamia nuts with essential market information on the German market.

OPSOMMING

Een van die belangrikste prioriteite van die Suid-Afrikaanse regering is om ekonomiese groei te handhaaf en te vergroot. Die Suid-Afrikaanse regering streef daarna om dit te bereik deur middel van uitvoergeleide groeibeleide. In baie uitvoereconomieë is hulpbronne skaars en dikwels staan die dubbele-toedelingsprobleem uitvoerbevorderingsinstellings in die gesig. Uitvoerbevorderingsinstellings het dikwels die moeilike taak om skaars hulpbronne effektief toe te deel (Cuyvers, De Pelsmaker, Rayp & Roozen, 1995). Die toedeling van finansiële hulpbronne bestaan onder andere uit verskeie uitvoerbevorderingsinstrumente wat gebruik kan word om uitvoersukses te behaal.

In 2005 het die Departement van Handel en Nywerheid (Department of Trade and Industry (die dti)), as handelsbevorderingsorganisasie in Suid-Afrika, die behoefte vir 'n wetenskaplike studie oor die realistiese uitvoermoontlikhede van produkte en markte uitgespreek. Dit sal besluitnemers in staat stel om die toedeling van openbare hulpbronne om produkte met die hoogste potensiële opbrengs te bevorder, wetenskaplik regverdig. 'n Besluitnemingsondersteuningsmodel (Decision Support Model (DSM)), ontwikkel deur Cuyvers (1995) is toegepas op die Suid-Afrikaanse ekonomie (in 'n studie waargeneem deur Viviers & Pearson (2007)) om prioriteitsprodukte met 'n hoë uitvoerpotensiaal in nuwe en / of bestaande markte te identifiseer. Die DSM het die produkgroep, onder die Standard International Trade Classification (Standaard Internasionale Handelsklassifikasie) (SITC), SITC 0577, as die twee-en-twintigste produk met die mees te realistiese uitvoermoontlikhede, geïdentifiseer. By SITC 0577: eetbare neute (edible nuts) (excluding nuts used in the extraction of oil) (uitsluitend neute gebruik in die onttrekking van olie) is ses-en-dertig potensiële uitvoerbestemmings geïdentifiseer.

Hierdie studie het elk van die vyftien produkategorieë wat verband hou met SITC 0577 op 'n HS-vlak geëvalueer, om die produk met die meeste potensiaal vir uitvoersukses vir die Suid-Afrikaanse ekonomie te bepaal. Dit is gedoen deur middel van die toepassing van 'n kwantitatiewe benadering deur 'n saamgestelde ide-indeks saam te stel om die uitvoerpotensiaal van Suid-Afrikaanse eetbare neute te analiseer. Die saamgestelde uitvoerpotensiaalindeks bestaan uit drie subindekse: Suid-Afrika se uitvoerprestasie-indeks, wêreldmarkte-indeks en die produksie-indeks. Gebaseer op 'n uitvoerpotensiaal indekstelling van 4.16, is makadamianeute, geklassifiseer onder neute nie elders

gespesifiseer (not else specified (nes)), geïdentifiseer as die produk met die hoogste potensiaal vir uitvoersukses vir Suid-Afrika. Nadat die produk met die hoogste uitvoerpotensiaal geïdentifiseer is, is handels- en marktoegangstatistiek geanaliseer om 'n teikenmark met die hoogste invoerpotensiaal vir Suid-Afrikaanse makadamianeute te bepaal.

Duitsland is vanuit die groep potensiële teikenmarkte as die teikenmark vir Suid-Afrikaanse makadamianeute gekies en die keuse is gebaseer op 'n analise van markgrootte, groeitendense, aandeel in die wêreldmark en toegang tot die mark. 'n Opname is onderneem deur middel van ongestruktureerde telefoononderhoude asook sekondêre inligtingsbronne om die marktoegangsvoorvereistes, verbruikerstendense en prysinligting vir die Suid-Afrikaanse uitvoerders van makadamianeute aan Duitsland te bepaal. Hierdie inligting is saamgestel in 'n markprofiel om aan uitvoerders van makadamianeute die belangrikste markinligting ten opsigte van die Duitse mark te verskaf.

ABBREVIATIONS

ACS	Australian Customs Service
BO	Biaxially Oriented
BOP	Balance Of Payments
CBI	Centre for the promotion of imports from developing countries
CIA	Central Intelligence Agency
CMC	Critical Market Characteristics
COMTRADE	Commodity Trade database
DIS	Dry in Shell
DSM	Decision Support Model
DTI	Department of Trade and Industry
ECB	European Central Bank
EU	European Union
FAO	Food and Agriculture Organisation
FAQ	Frequently Asked Questions
FAS	Foreign Agricultural Service
GAP	Good Agricultural Practices
GDP	Gross Domestic Product
GMP	Good Manufacturing Processes
GSP	Good Storage Practices
HACCP	Hazard Analysis and Critical Control Point
H-O	Heckscher-Ohlin theory
HS	Harmonised Commodity Description and Coding System
IMS	International Market Selection
IPM	Integrated Pest Management
ITC	International Trade Centre
NES	Not Elsewhere Specified
NTL	National Tariff Lines
OECD	Organisation for Economic Co-operation and Development
SAMAC	Southern African Macadamia nut growers Association
SITC	Standard International Trade Classification
TIPS	Trade and Industrial Policy Strategies
TISA	Trade and Investment South Africa
TK	Total Kernel

TKR	Total Kernel Recovery
UK	United Kingdom
UNCTAD	United Nation's Conference on Trade And Development
UNECE	United Nations Economic Commission for Europe
USA	United States of America
USDA	United States Department of Agriculture
USKR	Unsound Kernel Recovery rate
WCO	World Customs Organisation

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CHAPTER 1

INTRODUCTION

CHAPTER 1: INTRODUCTION

1.1. Background

As many other countries' economies across the world, the South African economy has been negatively affected by the global financial crisis. This has resulted in the real Gross Domestic Product (GDP) growth rate decreasing from 3.1% in 2008 to 1.8% at the end of the first quarter of 2009 (South African Reserve Bank, 2009; Economist Intelligence Unit, 2009). Despite the slowdown in economic growth, South Africa still remains the largest economy in Sub-Saharan Africa (World Bank, 2009). The top priorities of South Africa are to enhance economic growth and to generate employment. The South African Department of Trade and Industry (the dti), is seeking to achieve growth by implementing export-led growth policies (DTI, 2008). The South African economy adopted an outward-oriented growth strategy as part of their 2014 vision, highlighting the pivotal role this government will have to play and its commitment to liberalising the economy (DTI, 2008).

Export promotion or export marketing assistance is an economic concept whereby a country focuses on boosting its exports through the provision of access to external sources of information and financial resources to firms (Genturk & Kotabe, 2001). Export promotion is any form of incentive or inducement offered to potential and existing exporters to encourage them to export and maintain a foreign market share (Czinkota, 2001). Service and information provision are free or at a nominal charge. This enables firms to gain expertise at a nominal fee by reducing the total cost of investment and the associated trade costs (Genturk & Kotabe, 2001). However, research has shown that export promotion on its own does not stimulate sales growth in foreign markets. The employment of additional resources by the exporting firm is necessary to increase sales in foreign markets (Kirpalani & Macintosh, 1980). Governments adopt export promotion strategies in an effort to enhance export performance, expand foreign market shares and to increase the country's (through individual firms) level of competitiveness (Ward & Chang, 1990). A firm's level of competitiveness is measured by its competence and the quality of its export activities (Kotabe & Czinkota, 1992).

The adoption of export promotion programmes by government serves to aid firms to gain a competitive advantage by assisting them to acquire experiential knowledge that enables them to reduce the risks and uncertainty that prevails in foreign markets (Viviers & Calof,

1999). The amount and type of export promotion applied by government depends on the firm's level of export involvement. Genturk and Kotabe (2001:53) postulated five distinct levels of export involvement. The first level is passive involvement where the firm is not interested in exporting or venturing into foreign markets. At this stage, government can stimulate firms' interest in exporting by hosting seminars, as well as export counselling and export mentoring programmes for possible exporters to change their attitudes. Interest in exporting can be stimulated if experienced exporting firms present potential exporters with reliable and credible information about the export process (Tversky & Kahneman, 1974).

Exploratory involvement is the second stage and is characterised by devoting a few resources to the export market (Czinkota, 2001). At this stage, export assistance can be in the form of exporting guide handbooks, export financing, export insurance assistance, market study support (see market profiles Section 2.4.1.8 and Chapter 4), training programmes and logistics as well as communication support (Genturk *et al.*, 2001:53). Export assistance at this stage of export involvement is crucial and beneficial to the firm, as risk¹ is high due to management's lack of expertise in exporting. Government assistance therefore reduces the risks and costs associated with the initial stages of exporting (Calof & Beamish, 1995).

The subsequent stages that the firm will go through in establishing in foreign markets through exporting are experimental involvement, active involvement and committed involvement. Experimental involvement involves the firm exporting to countries with a geographical and cultural proximity to the domestic market (the market similarity theorem, see Section 2.4.1.4) (Genturk *et al.*, 2001:54). The fourth stage in the export development stage is active involvement. An active exporter is experienced, has regular export activity, has export sales levels that are more than 5% of total sales, and incorporates international considerations into planning (Genturk *et al.*, 2001:54; Czinkota, 1996:2). The fifth and final stage is committed involvement. This stage represents the highest stage of export involvement with the firm seeking business opportunities worldwide and particularly in countries that are further away culturally and geographically from the domestic market (Genturk *et al.*, 2001: 54). Export assistance will take the form of market development,

¹ At this stage, the firm is likely to face exchange rate risk, revenue risks such as uncertain demand, price risk, transportation risk and potential insolvency of customers that may affect the firm's existence and profitability (Adam-Muller, 1997:1421).

sales leads, organising foreign trade shows, market analysis, tariff reductions and the negotiation of trade treaties (Viviers *et al.*, 1999).

In many exporting economies, resources are scarce and often export promotion institutions face the double allocation problem (Cuyvers, De Pelsmaker, Rayp & Roozen, 1995: 173). The double allocation problem occurs when either public or private export promotion institutions face the difficulty of having to allocate scarce resources efficiently. Apportionment of financial resources is among several export promotion activities and instruments that can be used to assist exporters to attain the highest levels of export success (Cuyvers *et al.*, 1995:173, Viviers & Pearson, 2007). In South Africa, the allocation of resources to the export promotion activities was based on historic export trends (DTI, 2005). Furthermore, the apportionment of resources for export promotion activities did not have a scientific justification (TISA, 2005:47). As a result, no consideration was made for export opportunities in new markets or opportunities for new products in existing markets.

In 2005, the DTI, as the trade promotion organisation in South Africa, expressed the need for a scientific study on realistic export opportunities (products and markets) for South Africa. This study would enable decision makers to justify the allocation of public resources to promote products with the highest export potential earnings (DTI, 2005). A Decision Support Model (DSM) designed by Cuyvers, was applied to the South African economy in order to identify high priority products with high export potential in new and existing markets (Viviers & Pearson, 2007). This model for South Africa was based on the one the DSM developed for Belgium and Thailand (Cuyvers *et al.*, 1995; Cuyvers, 2004) but it was adapted to suit South African circumstances by adjusting some of the filters of the model.

The DSM involves a sequential filtering process with four filters that identify products and markets with the most realistic opportunities for export success (Cuyvers *et al.* 1995:174; see 2.4.1.7). The DSM was applied to South African data and a list of product-market combinations with realistic export opportunities was compiled. The product category SITC 0577: edible nuts excluding nuts used in the extraction of oil, was identified as one of the top products with realistic export opportunities for the South African economy (Viviers & Pearson, 2007).

Edible nuts (SITC code 0577) were identified as the twenty-second product with the highest export opportunities for the South African economy (Viviers & Pearson, 2007). SITC code 0577 (edible nuts excluding nuts used in the extraction of oil) was identified by the DSM as having thirty-six realistic opportunities or thirty-six potential export destinations to which edible nuts have the highest probability of export success (Viviers & Pearson, 2007). Nuts that fall under the SITC 0577 code are Brazil nuts, coconuts, cashew nuts, almonds, hazel nuts, walnuts, chestnuts, pistachios and macadamia nuts. The problem statement and research questions being addressed in this study will be discussed in the following section.

1.2. Problem statement

In order to effectively allocate resources and maximise the potential for export success for South Africa, it is important to identify which edible nut has the highest export potential. Additionally, it is vital to identify a suitable target market with the highest potential for the identified edible nut product. The DSM is a quantitative analysis of data and does not incorporate qualitative characteristics of the suitable export destinations. These characteristics include consumer tastes as well as preferences, the structure of the distribution channel, standards and regulations among others. These factors affect the probability of export success and need to be further investigated to assist South African exporters to enhance their understanding of the target market. Therefore, it is important to investigate the market characteristics of the target market and compile a market profile for South African exporters of the identified edible nut.

1.3. Research questions

The research questions of this study are therefore:

- I. Which edible nut product has the highest export potential and to which market?
(Product/market combination with the highest export potential).
- II. How can the exports of the identified product to the identified market be maximised?

1.4. Research objectives

The research objectives of this study will be outlined in detail.

1.4.1. Primary objective

This study firstly aims to identify which of the edible nuts classified under SITC 0577, identified by the DSM, has the highest potential for export success and to which market for the South African economy. Secondly, this study aims to compile a market profile for the product/ market combination with the highest export potential in order to maximise South African exports.

1.4.2. Secondary objectives

The primary objectives will be achieved by means of the following secondary objectives:

- Establish South Africa's existing market share of each edible nut product by analysing South Africa's current exports and imports of each edible nut product;
- Establish each edible nut product's market share and growth prospects in the world markets;
- Establish each edible nut product's existing production capacity for the South African economy;
- Compile a composite export potential index;
- Identify the edible nut product with the highest export potential;
- Assess potential target markets for the identified edible nut product;
- Establish each potential target market's market share of the identified edible nut product;
- Establish each potential target market's growth prospects in the world markets for the identified edible nut product;
- Assess the market access conditions faced by South African exporters of the identified edible nut product in the various potential target markets;
- Choose a target market for the identified edible nut product with the highest export potential;
- Collect information on the consumption patterns, prices, packaging requirements, distribution channels, among others in the selected target market;
- Compile a market profile on the target market for the edible nut product with the highest export potential; and
- Recommend export leads and business opportunities to industry leaders and the dti to enhance the exports of the identified product and market for South Africa.

1.5. Research method

The research method will consist of two elements. Firstly, a literature study will be undertaken on five components. The literature overview will seek to ascertain firstly, the reasons why firms venture into exporting. This will be addressed by looking at the macro- and microeconomic determinants of exports (see Section 2.2). The literature overview will secondly cover the benefits of exporting. This will assess the macro- and microeconomic benefits of exporting (see Section 2.3). Thirdly, the literature review will investigate the different approaches to international market selection. This will give an overview of the different methods that a firm can use when evaluating and selecting a target market for its product (see Section 2.4). The last two sections of the literature overview will give insight into the different entry modes that a firm can pursue and the establishment of a relationship with a potential client (see Sections 2.5 and 2.6). The scope of this study, however, will be limited to direct exporting. Information to conduct the literature survey is obtained from various sources including books, journals and Internet databases such as Ebscohost, Science Direct and Google Scholar.

The second element of the research method involves the empirical study. It will consist of quantitative analysis and secondary desk research. The empirical study will assess the export potential of South African edible nuts SITC 0577; to determine which edible nut product has the highest export potential. This will be achieved by building a composite export potential index comprising three sub-indices: South Africa's current export performance index, the world markets index and the production index (see Section 3.2). Trade data to compile the export potential index will be obtained from the International Trade Centre's (ITC) database TradeMap. Production statistics will be obtained from the United Nation's FAO database. This data will be analysed to assess whether the South African economy has sufficient production capacity for the export promotion of each edible nut product. Production and trade statistics will be compiled to construct the composite export potential index and to determine the product with the highest potential (see Section 3.4). Once the product with the highest export potential has been identified, trade and market access statistics will be analysed to determine a target market with the highest export potential for the identified product. Market access data will be obtained from the ITC's Market Access Map database.

A survey will be conducted through unstructured telephone interviews and secondary sources of information to determine the market entry requirements, consumption trends and the general price levels for the edible nut product with the highest export potential in the identified potential target market (see Section 4.8). Information will be obtained from publicly available secondary sources, such as books, journal articles and websites. This information will be compiled into a market profile to provide exporters of the identified nut product with essential market information on the identified target market.

1.6. The outline of the chapters

Chapter two will define key concepts and provide a theoretical framework for the study. A literature survey into the macro- and microeconomic determinants of exports and the benefits that accrue to a firm or a country through exporting will be undertaken. Additionally, chapter two will investigate the different approaches that can be employed in the international market selection decision-making process by a firm. The literature overview will also give insight into the different entry modes that a firm can pursue and on how a firm can establish a relationship with a potential client.

Chapter three provides an overview of the research method that will be followed when conducting the empirical work. The empirical work will determine the edible nut product, classified under SITC 0577, with the highest export potential for the South African economy. The main aim of this chapter is to outline the compilation of the composite export potential index. The composite index will comprise three sub-indices, namely South Africa's current export performance index, the world markets index and the production index. Additionally, in chapter three the results of the export potential assessment will be presented. This chapter will outline the findings of the research to determine the edible nut product, classified under SITC 0577, with the highest export potential.

Chapter four will firstly, conduct a target market assessment for the identified edible nut product. This chapter will also present a market profile on the identified edible nut with the highest export potential to the selected target market.

Chapter five will be the concluding chapter and will discuss the findings of the study. It will provide a summary of the findings of the literature survey and the empirical study.

Recommendations and conclusions drawn from this study will also be outlined in this chapter. Lastly, Chapter five will indicate areas of future research.

In the following chapter, a literature overview will be undertaken to give a theoretical framework for the study.

CHAPTER 2

OVERVIEW OF THE DETERMINANTS AND BENEFITS OF EXPORTING AND APPROACHES TO INTERNATIONAL MARKET SELECTION

CHAPTER 2: OVERVIEW OF THE DETERMINANTS AND BENEFITS OF EXPORTING AND APPROACHES TO INTERNATIONAL MARKET SELECTION

2.1. Introduction

Exports play a pivotal role in enhancing economic growth and are considered to be an instrument of growth in export-led growth theories (Awokuse, 2008: 161). On a macroeconomic level, exporting enhances the accumulation of technology, the development of technological capabilities² and capacity building for a country (Bell & Pavit, 1993). These aspects, once acquired, yield product and process improvement, all of which yield production efficiency (Romijn, 1995:359). Furthermore, economic activity is enhanced through the efficient allocation of resources. Exporting exposes firms and industries to competitive pressures that eliminate uncompetitive firms. As a result, firms are forced to be efficient and productive in order to survive (Ballasa, 1978:182). This, in turn, stimulates output growth or aggregate output in the economy as a whole (van Dijk, 2002:4). Increased aggregate supply in turn, induces an increase in aggregate demand, that is, both domestic and foreign demand for output (Ram, 1985). Higher demand provides a market for producers in economies with relatively limited domestic markets. This leads to an overall increase in economic growth, employment, as well as foreign currency earnings for the exporting country. Foreign currency earnings can be used to finance the imports of intermediate goods thereby enhancing capital formation and output growth (Esfahani, 1991). Empirical evidence shows that outward-oriented trade policies led to the success of East Asian economies such as Hong Kong, Taiwan and Korea after World War II (Ballasa, 1978).

On a microeconomic level, firms are motivated to export because of various potential benefits (see Section 2.3.2). Among them, the size of the domestic market may be too small for the firm, resulting in it seeking larger foreign markets (Calof, 1994:120). Furthermore, a firm gains from exporting through enhanced efficiency, improved resource allocation and increased capacity utilisation. These potential benefits facilitate gains from

² "Technological capabilities are all technical, managerial and organisational skills that generate and manage technical change" (Lall, 1992).

economies of scale³ and technological advancements to the firm (Helpman & Krugman, 1985).

The current chapter provides an understanding of some of the underlying factors in a firm's decision to export. A literature overview of the factors that act as stimuli for firms to pursue export ventures will be discussed. These stimuli can be classified under neoclassical and modern trade theories. The remainder of this chapter is organised as follows. Section 2.2 discusses the determinants of exports. Export stimuli can also be in the form of potential benefits that the firm will enjoy if they export. The macro- and microeconomic benefits accruing from exporting will be discussed in Section 2.3.

Section 2.4 provides a framework for conducting international market selection. This section lays a foundation for the research method used in this study (see Chapter 3). It provides a theoretical framework of the various approaches that can be employed by a firm when selecting a potential target export market. Section 2.5 provides an overview of the different entry modes that a firm can pursue and Section 2.6 provides a description of how firms can establish a relationship with a potential client. Finally, Section 2.7 provides a brief summary and conclusion of the chapter.

2.2. Determinants of exports

2.2.1. Introduction

There are various factors or determinants that act as stimuli for firms to export. Over time, these determinants have been analysed in different theories and will be subsequently discussed in the following sub-sections.

2.2.2. Neoclassical theories on the determinants of trade

Neoclassical trade theories⁴ point out factors such as factor input endowment and technology, which determine the supply capacity of a country as significant determinants of trade (Carbaugh, 1985:47). The Heckscher-Ohlin (H-O) theory of factor endowments is regarded as the core trade theory (Greenaway & Kneller, 2004:101). The H-O theory

³ Economies of scale are a fall in the average unit cost of production as the average unit of output increases (Mohr, Fourie *et al.*, 2008:215).

⁴ See Carbaugh, 1985 and Samuelson & Nordhaus, 1998.

contends that a country produces and exports products in which it has abundance in supply of a factor input and hence has a comparative advantage (van Dijk, 2002:2). Empirical evidence from a study of Indonesian firms supports these assumptions of the H-O theory. In this study of Indonesian firms, it was concluded that exports mainly consisted of goods and services requiring little skilled labour, given the abundance of unskilled labour in Indonesia (Ramstetter, 1999:60).

Neoclassical trade theories mainly focus on the country level differences in the availability of resources and skills as the main determinants of internationalisation. The common focus among earlier empirical studies was to determine the direction of the relationship between exports, growth and productivity, using country or industry level data (Wagner, 2007:1; Baldwin, 2000). Consequently, neoclassical empirical findings are limited to country-specific determinants of exports and no focus is placed on firm level determinants (Lawless & Whelan, 2008:1). As a result of the incomplete nature of neoclassical theories in explaining the determinants of exports at a firm level, firm level modern trade theories have emerged in international trade literature. These theories address the lack of availability of literature on firm level determinants of exports (Brewer, 2001:156). Since the 1990s, the availability of microeconomic datasets has surged, enabling modern trade theorists to investigate firm level determinants of exports (Bernard & Wagner, 2001:105). The following section discusses modern trade theories on the determinant of trade.

2.2.3. Modern trade theories on the determinants of trade

The modern trade theories of the 1980s predominantly focused on loosening some of the assumptions of the neoclassical theories such as the H-O theory of factor endowments. Accordingly, these theories incorporate the existence of imperfect competition and economies of scale as determinants of trade (Dosi, Pavitt & Soete, 1990). Strides in modern trade theories offer realistic hypotheses that incorporate monopolistic⁵ and oligopolistic competition⁶. These market structures realistically maintain market equilibrium

⁵Monopolistic competition is characterised by an industry or a group of firms that produces differentiated products that are homogeneous (Stigler, 1964:44).

⁶Oligopolistic competition occurs when a group of firms (more than one) or few large sellers compete and collectively account for a relatively large market share and sell relatively similar products (Erickson, 2008:374). Under oligopolistic competition, firms can maximise profits if they collude; therefore, each firm's supply and demand functions are interdependent on those of their rivals (Stigler, 1964:44).

through alternative means other than price differences (as in perfect competition) (du Plessis, 1996:46). Similarly, Tybout (2001:1) relaxed the assumption of perfect competition in an analysis of the effects of commercial policy on price mark-up, exports, productivity, profitability and firm size. Modern trade theories also incorporate individual firms so that the decision to export is determined at a microeconomic level. An analysis of the determinants of exports at firm and industry level enables the incorporation of factors such as technology intensity (Greenaway *et al.*, 2004:101; van Dijk, 2002:1; Dosi, 1988).

2.2.3.1. Firm heterogeneity

The neoclassical trade theories assumed the existence of identical firms. Bernard, Redding and Schott (2006:4) relaxed this assumption and analysed firm heterogeneity as well as its effect on a firm's decision to export. Under firm heterogeneity, firms produce differentiated products in the same industry unlike in the H-O theorem (Bernard, Eaton & Kortum 2003; Bernard *et al.*, 2006:32). Although modern trade theories relax some of the assumptions of the neoclassical trade theories, they maintain some of the underlying assumptions of the latter theories. The firm heterogeneity theory assumes that countries possess a comparative advantage based on factor endowments (as in the H-O theory) and that industries utilise different factor proportions and intensities (Bernard *et al.*, 2006:32).

Firms are heterogeneous in factors such as the level of productivity, the number of workers employed, the level of wages and capital intensity (Bernard & Jensen, 2001; Melitz, 2003:1696; Bernard *et al.*, 2006:32). The firm heterogeneity theorem hypothesises that the most productive firms in each industry have larger market shares and earn higher profits. As a result, these firms will "self select" into exporting with exposure to trade. The most productive firms have characteristics that enable them to successfully enter or self select into foreign markets with exposure to trade. These characteristics include higher levels of productivity, higher capital intensity, and more productive workers. The most productive firms are thus able to cover the entry costs associated with exporting (such as product adaptation and information collection) (Trifimenko, 2007:2). The least productive firms, however, will lose both market share and profit and will consequently be forced out of business with exposure to trade (Melitz, 2003:1696). The firm heterogeneity theorem and the self-selection hypothesis are important stylised facts of firm level determinants of

exports and have been found to be a dominant phenomenon in the United States of America, Germany, Columbia and Mexico (Edwards, Rankin & Schoer, 2008:30).

2.2.3.2. Firm size

One of the key determinants of exports in modern trade theory is the size of the firm. Van Dijk (2002:2) cited the association between firm size and exports to be attributed to factors that enable large firms to pursue export ventures. These factors include economies of scale, as well as the availability of financial resources and skilled labour. Large firms are more likely to have been profitable in the past and to have experienced lower marginal production costs⁷. Accordingly, this enables large firms to produce large volumes of output at a lower price and increase their probability to export (Bernard *et al.*, 2001:13). In any industry, a large proportion of the production output and exports come from the largest firms in the industry (Aw, Chen & Roberts, 1997; Tybout & Westbrook, 1996). Firms are also motivated to export by factors attributed to either a foreign country or the home country itself. This may be in the form of trade policies or the level of infrastructure development within a country (Tybout, 2001:13). The macroeconomic determinants of trade will be discussed in more detail in the following section.

2.2.4. Macroeconomic determinants of exports

2.2.4.1. Geographical location and infrastructure

The geographical location, transport infrastructure and administrative processes in a country have a direct impact on the total cost of transportation of goods and services locally and in transit to international markets (UNCTAD, 1995). Landlocked countries with poor transport and communication infrastructure have a high elasticity of trade flows in response to transport cost. Transport costs are 50% higher and trade volumes are 60% lower in landlocked countries compared to coastal countries (Limao & Venables, 2001:20). This implies that economies with poor infrastructure consequently have high transport costs and this adversely translates into relatively lower trade flows than coastal countries or those of countries with good infrastructure.

⁷ The cost of producing one additional unit, which in turn will bring the overall cost of producing the product line down (Carbaugh, 1985).

2.2.4.2. Exchange rates

Foreign exchange rate variations also play an important role in the initiation, expansion and profitability of international business operations (Leonidou, Katsikeas, Palihawadana & Spyropoulou, 2007:746). Exchange rate shocks, such as large devaluations or depreciations, can cause favourable output changes for exporters. A currency devaluation or depreciation implies that the demand of a currency is declining and as a result its price falls relative to other currencies. Exporters benefit in that export goods become cheaper as importers have to pay less for the same goods relative to their own currency. The magnitude of these gains depends on the firm's characteristics and its ability to respond to the relative price changes. Fluctuations in a country's exchange rate can induce increases in export supply through the divergence of output from the domestic market to foreign markets in the case of an established exporter. Alternatively, an increase in export supply can be attributed to increased productivity and subsequent entry into foreign markets by non-exporters in response to exchange rate variations (Bernard *et al.*, 2001:105). Empirical evidence suggests that firms consider the expectations on exchange rate fluctuations when making decisions to commit to exporting. Firms that enter the export market in response to exchange rate fluctuations are likely to continue exporting even if the exchange rate shock is reversed (Tybout, 2001:27; Edwards, Rankin & Schoer, 2008:82).

2.2.4.3. Commercial and trade policies

The quantity and direction of trade flows can also be influenced by the implementation of commercial and trade policies that promote trade by either domestic or foreign governments. Such policies include export assistance programmes, the reduction of tariffs, and trade liberalisation (Tybout, 2001:13; Leonidou *et al.*, 2007:748). Governments may seek to enhance exports in a bid to meet other economic goals, such as enhancing economic activity, increasing domestic employment, and generating foreign currency (Leonidou *et al.*, 2007:747). General equilibrium models suggest that trade liberalisation brings about scale efficiencies ranging between one and 5% of GDP (Tybout & Westbrook, 1995). This means that when trade is liberalised, firms will be able to produce larger volumes of output at a lower cost. These policies reduce an exporter's risks, associated trade costs and enhance potential export profits. Hence, commercial and trade

policies are seen as a strong stimulant of exporting activities (Simpson & Kujawa, 1974; Kaynak, Ghauri & Olofsson-Bredenlow, 1987).

2.2.5. Microeconomic determinants of exports

2.2.5.1. Unsolicited orders

A firm may be stimulated to export through an unsolicited order from a consumer in a foreign market. In this way, firms enter foreign markets through a reactive process (Hoang, 1998). If the first foreign consignment to an unknown consumer is successful, then more resources will be employed into that market to expand export operations (Brewer, 2001: 157).

2.2.5.2. Managerial attitudes and perceptions

Microeconomic export behaviour studies highlight managerial attitudes, perceptions and expectations towards exporting as important determinants of the firm's decisions to export (Perlmutter, 1969; Groke & Kriedle 1967). This implies that management must find the idea of devoting resources to export ventures appealing and profitable for them to make any decisions to initiate export activities (Simpson, 1973). Any export stimuli⁸ can only act as a real driving force in exporting only to the extent with which they are brought to the attention of the key decision-makers within the firm (Wiedersheim-Paul, Olson & Welch, 1978). An analytical review by Leonidou *et al.* (2007:738) of the factors stimulating smaller firms to export revealed that managerial interest and drive are critical determinants of the firm's decision to engage in export activities.

2.2.5.3. Foreign ownership

In a study of Indonesian firms, Ramstetter (1999:43) established that foreign-owned firms or multinational enterprises were more likely to export than local firms. Empirical evidence from Asia revealed that trans-national firms⁹ contribution to exports, compared to that of locally owned firms, was more than their contribution to employment (Ramstetter,

⁸ Export stimuli can be defined as all the factors that favourably influence the firm's decision to develop export activities (Leonidou *et al.*, 2007:737).

⁹ A trans-national firm or multinational enterprise is a company that manages production or delivers services in more than one country (Ramstetter, 1998: 98).

1998:44). Foreign-owned firms have efficient production processes, advanced technological know-how, intellectual property rights, efficient distribution and marketing networks that significantly reduce the trade costs associated with exporting, thus making exporting easier (van Dijk, 2002). Still, multinational companies can share these economies of scale across different plants, eliminating the need to replicate such expenditure (Bernard *et al.*, 2001). Aitken, Hanson and Harrison (1997) confirmed that foreign ownership positively influences the decision to export. As a result of the above-mentioned factors, multinational companies have a competitive advantage and are therefore able to produce products that can be marketed internationally (Ramstetter, 1999:44).

2.2.5.4. Sunk costs and economies of scale

Established firms may devote resources to research and development and this earns the firm significant advantages in costs and technological advancement (Samuelson & Nordhaus, 1998:677). Firms with a trade history in either the domestic market or foreign market are likely to experience reduced variable costs in the future after having covered the associated fixed trade costs (sunk costs¹⁰). Fixed or sunk costs include the cost of adapting the product to the foreign market's demand preferences, establishing a distribution channel, and adapting to new packaging requirements. This expenditure is unavoidable to the exporting firm, but once incurred, the firm is able to establish and expand its market share into foreign markets (Lawless & Whelan, 2008:32; Dixit, 1989). A firm will only commit to incur sunk costs if the discounted future profits expected from exporting are greater than domestic profits (Edwards *et al.*, 2008:82).

Alternatively, an established firm may, owing to sunk costs in research and development or to a large market share that enables the firm to spread its fixed costs, experience economies of scale (Mohr *et al.*, 2008:215). Economies of scale thus act as a mechanism to increase the likelihood of firms to export (Bernard *et al.*, 2001:13). Robert and Tybout (1997) in a study of Columbian firms concluded that a firm's decision to enter the export market was significantly influenced by the presence and size of sunk costs. Bernard and Wagner (2001) also found that an exporting firm with substantial sunk costs had a high

¹⁰ Sunk costs associated with entering an export market include research and development to help understand the demand patterns in the foreign market and costs of establishing distribution channels (Bernard & Jensen, 2001:5).

probability to export only in the short run. This is because the probability to export diminished by two thirds in the subsequent year, implying that the magnitude of the effects of sunk costs on the firm's decision to export diminished in the long run.

2.2.5.5. Business opportunities

Firms enter the export market in pursuit of business opportunities (Jeanet & Hennesy, 1998:239). These opportunities may include existing customers that move to foreign markets (unsolicited orders, see Section 2.2.5.1), the need to expand market share beyond the domestic market, potential to enhance profit by increasing market share, higher growth rates in foreign markets and the opportunity to exploit dissimilar stages in the product life cycle in different markets (Leonidou *et al.*, 2007:736; Jeanet *et al.*, 1998:239). The various properties of a product, such as how long the product has been in the domestic markets and unique characteristics of the product enable a firm to seek new markets abroad (Cavusgil & Zou, 1994:5). Once the firm is motivated to export, several benefits accrue both to the firm and its home country. The micro- and macroeconomic benefits of exporting will subsequently be discussed.

2.3. Benefits of exporting

Governments provide export promotion because of the possible benefits that the country will enjoy when its firms export (see Section 2.1). Some of the major reasons or possible benefits from providing export assistance include an increase in domestic economic activity, encouragement of employment, collection of additional tax revenues and the need to generate foreign currency (Cavusgil & Yeoh, 1994). The macroeconomic benefits of exporting will subsequently be discussed in detail.

2.3.1. Macroeconomic benefits of exporting

2.3.1.1. Economic growth

By opening up to trade, an economy can derive benefits of increased economic growth from exporting and this can be measured by increased productivity. Exports play a pivotal role in enhancing productivity and economic growth and are considered an instrument of growth in export-led growth theories (Awokuse, 2008: 161). Exporting firms become more

productive and efficient in response to increased competition in the foreign market, access to new technology and to complementary and intermediate inputs (Edwards *et al.*, 2008:79). Resources are allocated more efficiently and output growth is stimulated in the economy as a whole (aggregate output). Increased aggregate supply in turn induces an increase in aggregate demand, that is, both domestic and foreign demand for the output (Ram, 1985). Economic activity is enhanced with spill-over effects of increased domestic employment (Ballasa, 1978:182).

2.3.1.2. Productivity gains

Modern trade theories (firm heterogeneity theorem, see Section 2.2.3.1) indicate that with openness to trade, gains from trade accrue to the most efficient firms in the industry. These gains are in the form of increased market share and profits. On the other hand, the least productive firms lose market share and profits and consequently exit the industry (see 2.2.3) (Edwards *et al.*, 2008:80). These trade-induced reallocations make the industry more productive by reallocating market shares to the more productive firms, thereby increasing the industry's aggregate productivity levels (Melitz, 2003: 1715). This effect was found to be widespread among US firms (Bernard *et al.*, 2007; Edwards *et al.*, 2008:80). Empirical evidence from the South African economy supports this notion and notes a 5% increase in long-run total factor productivity gains from a 10% increase in openness to trade (Jonsson & Subramanian, 2001).

2.3.1.3. Encouragement of domestic employment

In neo-classical models the hypothesis of flexible wages ensures that the levels of employment in an economy are determined fundamentally by the labour market¹¹ (Wood, 1994). This implies that in a market where prices and wages are flexible, with exposure to trade, the firm becomes more efficient and is able to produce more goods at a lower cost (Milner & Wright, 1998). If the firm increases production and hence supply of its goods, this puts downward pressures on the price of the goods. In a flexible labour market, downward pressure on the price of the goods also exerts downward pressure on wages, thus creating capacity for the firm to employ more people at a lower wage and to produce more goods (Wood, 1997). This consequently encourages consumption and creates employment (Moreira & Najberg, 2000).

¹¹ See Stolper & Samuelson, 1950.

Employment creation through firms' exporting is particularly more substantial in 'open'¹² developing economies where unskilled labour is in abundant supply and exports are labour intensive (Krueger, 1982; Krueger, 1983; Balassa, 1982). Papageorgiu, Michaely and Choski (1991) found that exporting induced a relatively small negative short-term impact on employment in Brazil. In the short term, unemployment in the economy increases because workers, who lose their jobs when the least productive firms in the industry are forced out of business with exposure to trade, are not immediately absorbed or employed by the most productive and expanding firms (Papageorgiu *et al.*, 1991). This is attributed to the trade-induced industry reallocation or restructuring. Exposure to trade induces restructuring in the industry that yields increased productivity and profits for the most productive firms, while the least productive firms lose market share and are forced out of business (firm heterogeneity theorem see Section 2.2.3.1). In the long run, the most productive firms in the industry expand and create employment in the economy. However, the impact of the short-term increase in unemployment tends to be outweighed, in the long run, by a more labour-intensive output mix. Milner and Wright (1998) also found long-run increases in employment following trade reforms in Mauritius.

2.3.1.4. Foreign currency earnings and balance of payments

Export sales are paid out or settled in foreign currency. Foreign currency can be used to finance imports of intermediate goods, thereby enhancing capital formation and output growth (Esfahani, 1991). An increase in exports favourably affects the current account and the balance of payments (BOP) (Bernanke, 2005). A country's current account records a surplus when exports exceed imports, indicating that the country transferred more real resources (goods and services) to other countries than it received in a given period. The current account balance is important for a country as it is an indicator of the investment climate. Persistent current account deficits impart a negative investment position for the country (ECB, 2006).

Additionally, foreign currency earnings from exports enhance a country's foreign reserves. This build-up in foreign reserves can be attributed to high export revenues (Blanchard, Giavazzi & Sa, 2005). Foreign reserves can be used by a country's central bank to defend

¹² An open economy is one that can trade in goods and services with other countries and is largely free of trade restrictions (Carbaugh, 2008).

the domestic currency in cases of a significant negative shock on the exchange rate (ECB, 2006). Foreign reserves can also be used by the government to invest in foreign currency denominated assets. The accumulation of foreign reserves is not always a top priority as it is unnecessary and costly (Aitken, Hanson & Harrison, 1997).

2.3.2. Microeconomic benefits of exporting

2.3.2.1. Increased market share

On a microeconomic level, firms can be motivated to export by several reasons. The size of the domestic market may be too small for the firm, resulting in it seeking larger foreign markets (Calof, 1994:120). Expansion into international markets may also be attractive to a firm that is operating in a saturated market. Exporting, therefore, presents the firm with opportunities in new markets (Davidson, 1983). Foreign markets may present a potential market for a firm's excess production. Excess goods can be exported to other markets without having to substantially reduce the firm's profit margins¹³ (Daud, 2009). In this way, trading internationally presents a firm with the opportunity to increase its market share and become part of the global market place (Daud, 2009). Being part of the global market gives the firm an opportunity to expand and diversify its customer base and also to increase its long-term growth prospects.

A firm's sales volumes, profitability and existence can be threatened by its dependence on the domestic market (Kaynak *et al.*, 1987). Threats to the firm can be in the form of shifts in consumer preferences, new competitors and an economic slowdown. These factors can lead to a decrease in the firm's sales volumes and profits, an increase in competition and a decrease in the firm's growth capacity (Trimeche, 2002; Leonidou *et al.*, 2007:745). An exporting firm can curb over dependence on domestic markets and reduce its business risks by taking advantage of the different stages and intensities in different countries' business cycles through exporting its products and services (Albaum, Strandscov & Duerr, 2004). Exporting can reduce a firm's dependency on the domestic market and enable it to take advantage of the diversification of different markets (Trimeche, 2000; Czinkota, 2002:316). Different markets experience different growth rates for different products at the same time and this can be an opportunity for the firm to smooth out and stabilise its profits

¹³ When supply exceeds demand, a firm may have to reduce prices so as to equilibrate the excess supply to demand (Daud, 2009).

(Czinkota & Ronkainen, 2004:42). The effects of a downturn in the domestic market's growth prospects will be less for an exporting firm, as its business is not dependant on the domestic market only, but is spread over different markets (Daud, 2009).

2.3.2.2. Increased sales volumes

A firm trading in foreign markets can benefit from a potential increase in sales volumes and profit margins. Sales in the export market will grow as a result of increased consumer awareness of and brand loyalty to the product in the foreign market. To achieve these benefits the firm has to invest in increasing consumer awareness of the product, continuously supply and maintain a high quality product and invest in product development in order to maintain foreign market share (Daud, 2009).

2.3.2.3. Learning by exporting

Exposure to foreign markets enables the firm to gain a long-term competitive advantage and to derive differential benefits in both the domestic and foreign markets. Exporting gives firms access to more efficient financial and production resources. Firms are exposed to new business practices, new technological as well as technical know-how, and are able to develop new product ideas that are more profitable and better equipped to encounter competition in both local and foreign markets (Leonidou *et al.*, 2007:748). The firm learns by exporting. Competition in the foreign market makes the firm more responsive to different cultures and demand patterns, thus teaching the firm to survive in a different environment (Czinkota *et al.*, 2004:42; Wagner, 2007:61). This is because exports lead to the efficient allocation of resources (see Section 2.3.2.5), greater capacity utilisation, and yield gains from economies of scale (Helpman & Krugman, 1985).

2.3.2.4. Advanced technological know-how and intellectual property rights

Once a firm has acquired advanced technological know-how and developed new product ideas, it can also acquire patents on its intellectual property (Tesar & Tarleton, 1982). Intellectual property rights or patents enable the firm to inhibit product duplication by competitors and hence reduce competitive pressure in both the domestic and foreign markets. This competitive advantage enables an exporting firm to enjoy economies of scope. Economies of scope imply that the firm will incur minimal additional costs when

adapting the production technology to the foreign markets, as they would have been absorbed in the domestic market (Johnston & Czinkota, 1982; Hollensen, 2004:14).

2.3.2.5. Efficiency and economies of scale

If a firm adopts a standardised product and marketing strategy in its export market, fixed costs, such as production, administration, acquisition of production plants and machinery, can spread over a larger number of products (economies of scale) in different markets (Hollensen, 2004; Leonidou *et al.*, 2007:742). Exporting enhances the firm's productive efficiency, which will enable the firm to produce more products, to meet the increase in customer demand, and to have a broader market share (see Section 2.3.2.1) (Czinkota, 2002:316). Achieving economies of scale and reducing production costs enables the firm to be price competitive. Price competitiveness is achieved by reducing domestic and export prices relative to competitors, thus making the product cheaper and more competitive. Alternatively, the firm can maintain the existing prices and widen the profit margin and earn higher profits (Crick & Chaudry, 1997). This, however, does not apply to firms that adapt the product and disintegrate production processes to meet the requirements of the export market, as the production costs increase rather than decrease with scale (Hollensen, 2004).

2.3.2.6. Higher wages

Concurrent with increased profitability, workers also benefit from the firm's exports in the form of higher wages (Czinkota, 2002; 316). Higher earnings for the firm translate into higher wages for its workers (Czinkota, 2002:323). Export-oriented firms have been shown to pay significantly higher wages and to offer greater job stability than non-exporting firms (Richardson & Rindal, 1996).

2.3.2.7. Consumer gains

Consumers enjoy welfare gains in the form of enhanced choice between different varieties when firms internationalise (Krugman, 1980). Increased product variety implies greater ease of substitution between different products. If the products can easily be substituted, competitive pressure among firms increases and this induces downward pressure on

prices as well as the consumer price index (CPI) and a subsequent rise in real income for the consumers in the long run (Bernard *et al.*, 2006:33).

2.3.2.8. Higher standards

The magnitude of productivity gains from exporting depend on the degree of firm heterogeneity and on the standards of the firm's export destination. Developed countries set higher standards for product quality and present a more rigorous learning environment to which the exporting firm should conform to in order to survive. In contrast, developing countries have underdeveloped infrastructure that the firm has to encounter in order to trade (Trifimenko, 2007:2). As a result, the more productive exporting firms are more likely to enter the developed export markets, which demand higher entry costs especially in quality upgrading (Roberts & Tybout, 1997). This enables them to gain monotonically in relative productivity. Trifimenko (2007:21) found that the benefits from exporting are dependent on the quality of the learning environment (export market) in question and that the export market chosen will determine the extent of the productivity gains. This places great importance on the firm's international market selection (IMS) decision as its profitability and the magnitude of the gains from exporting are dependent on the quality of the selected export market.

Once the firm has been stimulated to explore export ventures, a decision based on qualitative and quantitative techniques must be employed to decide which country and city the firm should export to. The following discussion will concentrate on the different approaches that can be employed in selecting an international target market.

2.4. International market selection (IMS)

The success of introducing a firm's product into a foreign market depends on the firm's ability to identify a market that is best fit for its product (Cardozo, McLaughlin, Harmon, Reynolds & Miller, 1993). Hoffman (1997:66) highlighted that firms should understand the multiple relationships that must be dealt with when introducing a product into a new international market. These relationships can be analysed by applying early international business models, such as the systematic approach to IMS and decisional models. These models are used to systematically evaluate and identify factors in the foreign market that have a significant impact on the firm's future profitability (Kugel, 1973).

Part of the firms' decision to internationalise its product, is to select a potential target market and to identify a faceless consumer to export its products to (Andersen & Buvik, 2002). This decision is called IMS and is a process that firms go through in order to select a foreign country or region as a geographic target market for their export products (Brewer, 2001: 155). IMS includes setting up criteria to select potential markets, investigating market potential in each market, classifying the potential markets according to the established criteria and selecting which market to enter (Kumar, Stam & Joachimsthaler, 1994). The different approaches that can be employed by a firm when selecting an international target market will subsequently be discussed.

2.4.1. Different approaches to IMS

2.4.1.1. The traditional approach

There are two different traditional approaches, namely the systematic and the unsystematic approaches (Papadopolous & Denis, 1988). The systematic approach entails an integrated system that includes statistical analysis in the decision-making process (Andersen *et al.*, 2002:348). Andersen *et al.* (2002) proposed a formal structure, which included defining market selection and separating it from other goals of the firm as a first step. The second step in this formal structure is to establish a criterion on which the potential target markets can be analysed. Potential target markets can then be assessed based on country-specific indicators, such as the macroeconomic, political and cultural factors (Root, 1994). Market-specific indicators, such as market size, distribution channels and competition can be used (Davidson, 1980). The different indicators are weighted in conformance to the rank of the firm's objectives (Andersen *et al.*, 2002:349). Statistical analyses can now be used to determine the most attractive potential target market for the firm's product. The market estimation methods¹⁴ or market groupings methods¹⁵ can be applied to the data to determine the optimal IMS decision (Papadopolous *et al.*, 1988).

The unsystematic approach is an alternative method. It provides guidelines and describes processes that can be followed in the decision-making process in IMS (Andersen *et al.*, 2002:350). The main assumption of this approach is that firms will try to enter markets

¹⁴ Market estimation methods involve determining a certain threshold level for each of the indicators, such that the decision makers will only consider countries that exceed the specified levels (Andersen *et al.*, 2002:349).

¹⁵ Market grouping methods cluster countries into acceptable and non-acceptable constellates, but this process requires complete information about the alternatives (Papadopolous *et al.*, 1988).

with greater psychic or psychological distance (Johanson & Vahlne, 1990). Psychic distance is the degree of perceived similarity between the domestic market and the foreign market (Evans & Mavondo, 2000:311). This perceived similarity takes into account the existing business and cultural differences in the two markets. Johanson and Wiedersheim-Paul (1975:308) stated that psychological distance can be measured by factors that prevent or disturb the flows of information between the firm and the market. The obstructions to the free flow of information can be attributed to differences in language, education, business practices, culture, religion, political systems, legal systems and industrial development between countries (Carlson 1974; Johanson & Vahlne 1977:24; Johanson & *et al.*, 1975; Andersen *et al.*, 2002:350). These factors hinder direct communication between the firm and its customers (existing and potential) and restrict access to market information. This eventually leads to a significant reduction in the firm's profitability and growth (Evans, Treadgold & Mavondo, 2000:166). A panel of experts from different Australian firms found that psychic distance is a significant predictor of the export market selection decision (Dow, 2000:52). According to the psychic distance hypothesis, firms therefore tend to export to markets that they can easily acquire information on and that are geographically and culturally closer to them (Benito & Gripsrud, 1992:464).

2.4.1.2. The degree of market similarity

Similar to the psychic distance theorem, Davidson (1983:440) proposed that the IMS decision is significantly influenced by the degree of market similarity¹⁶. This implies that firms will employ a bottom-up approach in its international selection strategy by targeting familiar markets first and exploiting new and unfamiliar markets at a later stage (Andersen & Strandskov, 1998:69). Market similarity can be attributed to three underlying effects; these include supply, demand and uncertainty. The first underlying effects are supply related. If the foreign market is similar to the domestic market, the firm can cluster these markets and this will enhance efficiency through standardised production and marketing processes (Liander, Terpstra, Yoshino & Sherbini, 1967). The second underlying effects are demand related. These imply similar consumption patterns and consumer tastes in both the domestic market and the foreign market. Thus, total demand (domestic and foreign) is likely to be high and minimal adaptation of the product is required in these markets (Andersen & Strandskov, 1998:68). The firm's product is then likely to be tested

¹⁶ Market similarity is the degree of resemblance between the foreign market and the firm's home market (Davidson, 1983:439).

successfully and introduced in foreign markets with similar demand patterns to the market for which the product was originally developed (Davidson, 1983:440). The third effect is that of uncertainty. Firms are assumed to limit their preliminary potential target market assessment to similar markets initially and eventually broaden their horizon to culturally and geographically distant markets as they gain experience in foreign markets (Wind, Douglas & Perlmutter, 1973). This aspect in the market clustering approach is similar to the psychic distance rule-of-thumb of the unsystematic approach to IMS (see Section 2.4.1.1).

2.4.1.3 Critical market characteristics (CMC)

Hoffman (1997:68) addressed some of the shortcomings of the early international business models and proposed a computer-based, two-stage quantitative IMS model. This model involved analysing and determining significant factors in each potential foreign market. The Critical Market Characteristics (CMC) may include economic factors, such as inflation, prices, tax rates and currency parity (Hoffman, 1997:68). Social factors, including the country's demographic structure, language and education levels can also be included to reflect the type of consumer in that country and whether the firm's product has the right market in that country (Bradley & Wilkey, 1974). Other variables that can be included are technical factors (media technology in advertising, rate of technological change) and physical factors (climate, probability of occurrence of natural disasters) (Miles, 1980). The first stage of this model is to assess the possible impact of CMC in the general environment to the firm's objectives. It additionally assesses the effects of CMC on the optimisation of the firm's profitability. The second stage of this model determines a target city in the chosen country. After determining the target city, the firm then runs a preliminary market test. Factors that can be analysed to determine the test market city include demographic characteristics, purchasing patterns, structure of the distribution channel and the availability of advertising infrastructure (Segal & Johar, 1992). In both stages of this model, the significance of all the factors is tested quantitatively by running a multiple regression model (Hoffman, 1997:71).

2.4.1.4 Composite export potential index

Similar to the CMC approach, the International Trade Centre (ITC) developed a composite index based on a combination of indicators to rank markets according to potential growth.

The composite index consists of three sub-indices, namely i.) the importing country's import index, ii.) the world markets index and iii.) the production index. The variables used in each sub-index are standardised as they are on different scales of measurement. A comparison of these variables and the compilation of an index can only be done when these variables are measured on the same scale and have the same range (Freudenberg, Paulmier, Ikezuki & Conte, 2008:12; Fields, 2005:120). The values are standardised into an index value on a scale that lies between 1 (weak performance) and 5 (best performance) or 1 and 100 depending on the size of the sample, using Equation 2.1.

$$1+4 \times \frac{\text{Value} - \text{Lowest value}}{\text{Highest value} - \text{Lowest value}} \quad (2.1)$$

From Equation 2.1, for example, when constructing the world markets index, the value is the world import values of each market and the lowest and highest values are chosen as such within the range of the sample (Freudenberg *et al.*, 2005). The composite indices can be weighted according to theoretical or empirical evidence that guides the assignment of weights. Freudenberg *et al.* (2005) established that weights should be assigned to each indicator to show the level of importance each indicator has in the final index, justified by theoretic or empirical evidence.

The measurement of the overall potential of each market will be determined by each market's score on the export potential index, which will be an average of all the sub-indices. A market with high potential will be determined on the basis of high scores on existing imports, favourable market access conditions and high import growth rates. This approach can also be applied to assess and determine the export potential of product groups (see Section 3.2) (Freudenberg *et al.*, 2005).

2.4.1.5. Decision support model (DSM)

A model based on the decision support systems¹⁷ for Belgium and Thailand was designed in order to determine realistic export opportunities (profitable export markets) at a national

¹⁷ A decision support system is a computerised information-based model that can be used to assist managers to analyse information in decision-making processes (Sprague, 1980:1).

level (Cuyvers *et al.*, 1995:2). This model known as the DSM consists of a sequential screening process with four consecutive filters that appropriate for the identification and omission of less interesting market opportunities (Cuyvers *et al.*, 1995:2). The main aim of the DSM is to compile a limited list of realistic opportunities in world markets, for a given country and thus identify a more limited set of choices for the governments and firms alike.

Filter 1, in the model analyses the commercial and political risk of doing business with each country, as well as the general macroeconomic indicators of all countries in the world in order to determine general potential (Cuyvers *et al.*, 1995:2). In filter 2, market potential of the various product groups for the remaining countries is assessed by looking at the growth rate of imports (growth rate of imports of a given product group by a given country) and import market size (the value of imports of a given product group by a given country) (Cuyvers, 2004:3). Product: market combinations were rejected for further screening if they exceeded a certain threshold value. Filter 3, analyses the accessibility of each market by assessing all kinds of barriers to entry and / or that show a likelihood of dominant bilateral trade patterns that are difficult to enter. This is measured by the Herfindahl-Hirschman index. After the completion of Filter 3, a list of probable export opportunities is obtained, showing product: market combinations with enough potential to be exploited profitably. Filter 4 categorises export product: market combinations based on the country's relative market size and medium- to long-term growth prospects (Cuyvers *et al.*, 1995:16).

The above-mentioned approaches (DSM, CMC and systematic approach) are similar in that they are all secondary information based. The reliance on secondary data for market comparisons in the IMS decision-making process presents several shortcomings. These methods are constrained by accuracy, data collection methods and the availability of up-to-date statistics (Andersen *et al.*, 1998:68). Information-based models seek to reduce uncertainty in the general environment by including as many external variables as possible to evaluate their possible effect on the firm's profit position (Kugel, 1973; Hoffman, 1997:68). However, the attempt to capture all the critical factors in one model, gives rise to problems of information overload thus reducing the quality of the model output (Bourgeois, 1984).

Cuyvers *et al.* (1995:174) have established that the DSM should be used in combination with other considerations, given that current data availability is generally limited. It would therefore be unwise to rest all export market selection decisions upon the DSM alone. The ITC proposes an in-depth analysis of market characteristics and market access conditions as factors in international market selection. Critical market information in the target market is then compiled in a market profile.

2.4.1.6. Market profiles

The ITC takes the analysis of the IMS process further by developing market profiles for a specific product in a specific market. This approach firstly involves a detailed analysis of trade and market access data of potential target markets to screen and determine a target market with the highest export potential for a specific product (Camacho, 2008). A target market is selected on the basis of the market size (country's imports of that product), positive import growth rate and favourable market access conditions (low or no tariffs charged on imports of the product) (Sampson, 2006:10). The second part involves secondary research into the selected target market. The research is organised to give as much information and detail on the firm's product in the selected target market, taking both qualitative and quantitative information into account. Market profiles were developed by the ITC mainly to help developing countries to expand foreign trade of specific sectors or products (Sampson, 2006:14).

A market profile contains practical information necessary to help exporters to make specific marketing decisions when exporting, by giving an overview of the market opportunities, conditions for market entry and trends in a given import market. Market profiles consist of various elements such as a product description, which gives a precise definition of the product being analysed and hence the scope of the market profile (Sampson, 2006:14). Other aspects that are incorporated in a market profile include market characteristics, market access conditions, prices, competition, packaging, labelling, structure of distribution channels, market prospects and existing forms of sales as well as trade promotion in the importing market. Statistical data on production and consumption patterns is also provided to help exporters understand the import market (Sampson, 2006:16). The subsequent section focuses on cognitive maps as an alternative approach in IMS.

2.4.1.7. Cognitive maps in IMS

Information-based models ignore the role of strategic choice or the rationality of managers in the decision-making process and imply that the decision-making process depends only on the accuracy of the data (Andersen *et al.*, 1998:68). The simplification of managers' cognitive decision-making process is necessary to assist managers and decision makers to process market information and make better IMS decisions (Barr, Stimpert, & Huff, 1992). Cognitive structures or cognitive maps summarise and organise the managers' interpretation of the similarities and differences in the components in the IMS analysis (Douglas & Craig, 1992). In this manner, cognitive mapping enables the analysis of assumptions and the mental structures managers make when assessing market information (Argyris & Schon, 1978). This component of the IMS decision-making process can be used to overcome the inconsistencies in the course of action that can be undertaken in different circumstances, thus enhancing competence in the IMS process (Andersen *et al.*, 1998:81). The following section discusses the different modes of entry in the internationalisation process and is limited to direct exporting.

2.5. Modes of entry for direct exporting in the internationalisation process

Direct exporting is considered as the easiest way for a firm to internationalise compared to other modes of entry, such as investing in the establishment of a production plant or contractual entry through joint ventures (Zafarullah, Mujahid & Young, 1998; Root, 1994). Direct exporting normally entails full control by a parent company with internalised business operations (Andersen *et al.*, 2002:359). This mode of entry into foreign markets can easily be adapted by management as it requires minimal commitment of resources and it minimises business risks that are associated with entering new markets (Leonidou *et al.*, 2007:736).

Johanson *et al.* (1975) pioneered research into the entry modes in the internationalisation process. They differentiate four different modes of entering an international market with the successive stages representing higher degrees of international involvement. In the first stage, the firm has no regular export activities. Management has no interest in exporting and devotes all production and marketing resources to the domestic market (Bilkey & Tesar, 1977; Cavusgil, 1980; Czinokota 1982). In the second stage, the firm explores exporting using an agent or an independent representative (Johanson *et al.*, 1975; Bilkey *et al.*, 1977). Other theorists suggest that the firm may supply unsolicited

orders without committing more resources to exporting and or conduct an information search to determine the feasibility of active exporting (Cavusgil, 1980; Czinokota 1982).

In the third stage, the firm subsequently establishes overseas sales subsidiaries. The firm will export more volumes to different countries and evaluate the success of the export ventures (Reid, 1987; Cavusgil, 1980). The final stage involves the commitment of resources to the establishment of production and/or manufacturing units in foreign markets (Johanson *et al.*, 1975). Entry mode literature has evolved to include other entry modes that are classified as international supply methods and these include licensing and joint ventures (Root, 1987). However, the scope of this study is limited to direct exporting. In the following section, the discussion focuses on how a firm can establish a relationship with a potential trade partner.

2.6. Establishing a relationship with a potential trade partner

Once the firm has selected a target market for its product, it is important to build on its international competence. Competence can be enhanced in its mode of entry by establishing a relationship with a potential client. This is important for the firm as it enables the formulation of competitive marketing strategies as part of the IMS decision-making process, especially in the early stages of the firm's internationalisation (Andersen *et al.*, 1998:67). A relationship with the client can be established by the client's initiation to establish a relationship (unsolicited orders¹⁸ see Section 2.2.5.1; Appendices 4 and 5). Empirical evidence reveals that the choice of international markets is often based on unsolicited orders and those buyers or customers play an active role in initiating the establishment of trade. The exporter covers a small scope of research into the potential trade partner (Bilkey, 1978).

The relationship approach to IMS addresses and analyses the establishment of business relationships between the exporter and potential trade partners (Andersen *et al.*, 2002:352). Relationships develop in five stages, according to Dwyer, Schurr and Oh (1987) namely awareness, exploration, expansion, commitment and dissolution. The process of establishing a relationship with a potential exchange partner is gradual and can take place in these five distinct stages because of the lack of knowledge and uncertainty

¹⁸ see Section 2.2.5.1.

surrounding the selection of feasible international trade partners. The initiation of a relationship may be made easier by existing direct and indirect relationships between the firm and suppliers, suppliers' suppliers and customers' customers (Blankenburg & Eriksson, 2000). Potential trade partners are chosen selectively on the basis of their perceived appeal in enhancing the firm's goals (Heide, 1994) (see Appendix 4).

Once a potential trade partner has been chosen, the firm devotes resources and explores the relationship through trial purchases (Dwyer *et al.*, 1987). The outcomes of the preliminary exchange are used to evaluate the compatibility of goals and prospects of committing further resources (Duff & Fearn, 2004). This stage in building a relationship with a potential exchange partner reduces perceived uncertainty and increases the probability of commitment (Morgan & Hunt, 1994). Andersen *et al.* (2002:359) proposed that the relationship approach could be used with the traditional approach to country selection (see Section 2.4.1).

2.7. Summary

A firm may be stimulated to internationalise through exporting by business opportunities in foreign markets. These can be in the form of lower costs of production that translate into competitive prices or the possession of intellectual property rights that inhibit duplication of the firm's product, hence maintaining the firm's competitive position. These factors act as stimulants to the firm to pursue internationalisation through direct exporting. In the event that the firm decides to export, both the firm and the home country will earn benefits such as increased sales, higher profits, access to advanced technology, enhanced managerial know-how, enhanced economic growth, encouragement of domestic employment, and foreign currency earnings.

Awareness of the opportunities in exporting is just a first step for the firm. The firm must decide which country to export to and which firm to do business with. Various approaches can be applied to select a potential export country. A firm can adopt the traditional approach to IMS. This criterion consists of two approaches, namely the systematic approach and the unsystematic approach. The systematic approach involves the firm defining its market selection as an individual goal to the firm and choosing a criterion on which potential target markets should be analysed. The second approach under the traditional approach is the unsystematic approach. Research has shown that this

approach is more commonly used compared to the systematic approach. A market is chosen as an export market if it has great psychological distance.

The firm can employ the degree of market similarity approach in IMS. In this approach, firms will enter similar markets to the domestic market first and then exploit unfamiliar markets at a later stage. Market similarity can be attributed to supply-related conditions, where the firm clusters similar markets and enhances efficiency through standardising production and marketing processes. Additionally, market similarity can be attributed to similar demand patterns resulting in similar consumption patterns and tastes and hence minimal adaptation of the product for foreign markets.

The critical market characteristics (CMC) approach is a two-stage, computer-based approach to IMS that can also be applied by a firm. This process involves an analysis of the possible impact of CMC on the firm's profitability and objectives. CMC may include inflation, exchange rates, levels of education of the work force, language, climate, and the rate of technological change.

The ITC formulated an alternative approach whereby markets are ranked according to a combination of indicators in a composite export potential index. The index analyses each of the potential target markets in three sub-indices; the current export performance index, the world markets index and the production index. Each component of the sub-indices is weighted or standardised and assigned index values. The measurement of each market's overall potential is determined by its export potential index score, which is an average of the three sub-indices.

A firm can also apply a decision support model to determine realistic export opportunities (profitable export markets) in IMS. The model consists of a sequential screening process with four consecutive filters that appropriate for the identification and omission of less interesting market opportunities.

The ITC takes IMS analysis further and proposes an alternative approach to target market selection, namely market profiles. A target market is selected on the basis of the market size, import growth rates, and favourable market access conditions. Additionally, secondary research into the selected target market is conducted and compiled into a market profile. Market profiles comprise various elements, such as a product description, market characteristics, market access conditions, prices, competition, packaging and

labelling, the structure of distribution channels, market prospects, and the existing forms of sales or trade promotion in the importing market.

Lastly, this chapter considered cognitive maps as an approach in IMS. This approach takes into account the role of strategic choice or the rationality of managers in the IMS decision-making process. Cognitive maps are meant to enable the analysis of assumptions and the mental structures managers make when they assess market information in the IMS process. This component of the IMS decision-making process can be used to overcome the inconsistencies in the course of action that can be taken in different circumstances and to build international competence in IMS.

The last stage in the IMS process that was addressed in this chapter was the process of establishing a relationship with a potential trade partner. This process can evolve in five distinctive stages due to the lack of perfect knowledge on prospective trade partners and uncertainty associated with new business ventures. Trial purchases are usually done once the firm has raised awareness with a potential trade partner. If a trial purchase is successful and is likely to fulfil the firm's goals, then the firm will commit more resources and expand the business relationship.

In the following chapter, the research method that was employed to assess the export potential of South African edible nuts (SITC 0577) will be discussed.

CHAPTER 3

ASSESSING THE EXPORT POTENTIAL OF SOUTH AFRICAN EDIBLE NUTS (SITC 0577)

CHAPTER 3: ASSESSING THE EXPORT POTENTIAL OF SOUTH AFRICAN EDIBLE NUTS (SITC 0577)

3.1. Introduction

The DSM identified the product group, under the Standard International Trade Classification (SITC) SITC 0577, as the twenty-second product with the most realistic export opportunities (Viviers & Pearson, 2007). SITC 0577: edible nuts (excluding nuts used in the extraction of oil) were identified as having thirty-six potential export destinations. This chapter will evaluate each of the fifteen HS product categories corresponding to SITC 0577. The main aim of this analysis will be to establish the edible nut product with the most potential for export success for the South African economy. The method used in this current study to screen the different edible nut products and to identify export potential, was adopted from Freudenberg and Paulmier (2005:33) of the ITC (composite index see Section 2.4.1.4). Components of the ITC index in this study were adapted to suit the available data for South Africa for the products corresponding to SITC 0577: edible nuts.

The export potential of each product group under SITC 0577 will be assessed by constructing a composite index. The index will give insight into the market and production dimensions of the products. In this study, nine indicators will be taken into account and these are encompassed in three sub-indices, namely South Africa's current export performance index, the world markets index and the production index. The rest of this chapter is set out as follows: firstly, Section 3.2 will discuss the different elements that are included in each sub-index in the export potential index. Additionally, this chapter will discuss how the variables in each sub-index will be standardised and weighted into the same scale of measurement (see Section 3.3). Section 3.4 will discuss the findings of each of the sub-indices and identify the edible nut product with the highest export potential. Lastly, a summary of the chapter will be provided in Section 3.5.

3.2. Building an export potential index

In this study, the composite export potential index comprises three indices. These are South Africa's current export performance index, the world markets index and the production index.

South Africa's current export performance index includes the following elements:

- South Africa's exports of each edible nut product in US dollar value;
- The share of South Africa's exports of each edible nut product in world exports (%);
- The growth rate of South Africa's exports of each edible nut product (%) in value (over five years); and
- South Africa's relative trade balance for each edible nut product (%) (Net difference between South Africa's exports and imports of each product).

The world markets index includes:

- World imports of each edible nut product in US dollar value in 2007;
- Quantities of world imports of each edible nut (tons) in 2007; and
- Growth rate in world imports of each edible nut product both in value and in quantity (%) (Over five years).

The production index measures South Africa's existing production capacity of edible nuts by measuring South Africa's production of each edible nut (tons) as a proportion of world production.

3.3. Standardising the data

The variables used in each sub-index are on different scales of measurement, that is, in US dollars, percentages and tons. Comparison of these variables and the compilation of an index can only be done when these variables are measured on the same scale and are within a similar range (Freudenberg *et al.*, 2008:12). The variables were therefore standardised, namely "converted into a standard unit of measurement" (Fields, 2005:120), to change them into an index value on a scale that lies between 1 (weak performance) and 5 (best performance).

An index value of 1 represents values that fall below or is equal to a certain (lower bound) threshold value, while an index value of 5 represents values that fall above or are equal to a certain (upper bound) threshold value (Freudenberg, 2008). In this study, there were fifteen product categories being analysed and a scale that lies between 1 and 5 chosen to be more appropriate. This was because it showed a better variance in the dispersion of the data. From Equation 2.1, (see Section 2.4.1.4), the upper and lower threshold values were chosen to be the highest and the lowest values in the range of the data. All other variables obtain index values according to their dispersion from the minimum and maximum threshold values to give them index values (Freudenberg *et al.*, 2005 34).

The sub-indices were weighted equally with no particular composite indicator being more important than the others, as there was no particular theoretical or empirical evidence that guided the assignment of weights. The following section will discuss the results of the export potential assessment of South African edible nuts (SITC 0577).

3.4. Identifying the edible nut product with the highest export potential

3.4.1. Introduction

The data used in the DSM (see Section 1.1) model for the South African economy was SITC four-digit level data. The SITC system is a categorisation of products under different headings that take into account the product's physical attributes, materials used and the stage of processing of the product (Chandrasekharan, 1995:14). The SITC classification only includes products that enter merchandise trade and therefore provides a way to map the flow of goods and services from different countries. The information available at the SITC four-digit level is an aggregate of different products. SITC heading 0577 has the definition: edible nuts, which exclude nuts used for the extraction of oils (Comtrade, 2008). Edible nuts: SITC 0577 includes 15 different nuts under the Harmonised System (HS) of classification.

The Harmonised Commodity Description and Coding System (HS System (HS)) classification is an international numerical product nomenclature which was developed by the World Customs Organisation (WCO). The HS system organises products in a logical and legal structure for the collection of customs duty and international trade statistics (WCO, 2008). The HS is used by almost all countries in the world and covers 98% of the

classification of merchandise in international trade (Camacho & Freudenberg, 2008:64-66). Headings under the HS are standardised internationally up to 6 digits implying that these digits are comparable between different countries. The HS headings comprise of the HS 2-digit level, which is the chapter or sector of the goods, the HS 4, is the sub-sectors and the HS 6 is the product level classification (WCO, 2008; Camacho *et al.*, 2008:65). More detailed classification of products can go up to HS 12-digit level and these are known as National Tariff Lines (NTL) (ITC, 2008). NTL are not harmonised between countries and are subject to each country's decision to further classify products beyond the HS 6 level, hence NTL is country specific.

Table 3.1: SITC 0577 and corresponding HS codes

SITC 0577			
HS 0801		HS 0802	
HS	Product	HS	Product
080111	Coconuts, desiccated	080211	Almonds in shell fresh or dried
080119	Coconuts, excluding desiccated	080212	Almonds, fresh or dried, shelled or peeled
080121	Brazil nuts, in shell, fresh or dried	080221	Hazelnuts or filberts in shell fresh or dried
080122	Brazil nuts, without shell, fresh or dried	080222	Hazelnuts or filberts, fresh or dried, shelled or peeled
080131	Cashew nuts, in shell, fresh or dried	080231	Walnuts in shell, fresh or dried
080132	Cashew nuts, without shell, fresh or dried	080232	Walnuts, fresh or dried, shelled or peeled
		080240	Chestnuts, fresh or dried, whether or not shelled or peeled
		080250	Pistachios, fresh or dried, whether or not shelled or peeled
		080260	Macadamia nuts, fresh or dried, whether or not shelled or peeled
		080290	Nuts edible, fresh or dried, whether or not shelled or peeled, nes

Source: Adapted from Morales, 2007.

Since the ITC's method was based on HS data, the corresponding HS codes of SITC 077 were used in the further analysis of the data (see Table 3.1). In order to be able to identify a specific nut with the highest export potential, it was necessary to convert the SITC 4-

digit product category, namely SITC 0577: edible nuts, to its corresponding HS codes. The product category SITC 0577 identified by the DSM corresponds to two HS codes at a four-digit level, namely HS 0801 and HS 0802. This is based on the United Nation's Commodity Trade (COMTRADE) statistics database conversions from SITC to HS codes (Morales, 2007). This study assessed the export potential of the two product categories at an HS six-digit level of HS 0801 and HS 0802. HS 0801 covers Brazil nuts, cashew nuts and coconuts and HS 0802 (nuts not elsewhere specified), which includes the products almonds, hazelnuts, walnuts, chestnuts, pistachios, macadamia nuts and nuts not elsewhere specified (see Table 3.1).

The HS product specific data was used in this study because of the above-mentioned attributes, and also because governments, the private sector, international organisations and customs authorities use the HS classification extensively as compared to the SITC. In this manner, the results of this study on an HS level would be more useful compared to SITC data (TIPS, 2008). The results of this study will therefore be more beneficial to the various stakeholders if product-specific information is provided. The SITC classification (the four-digit level) is not detailed sufficiently enough in order for the trade promotion organisations (in the case of this study, the dti) to be able to promote the exports of specific products.

3.4.2. Components of South Africa's export potential index for SITC 0577

3.4.2.1. Composite index 1: South Africa's current export performance

The current export performance index measures the current performance of South African exports of each edible nut product and establishes South Africa's position in world markets for each of these products. This approach is backward looking and implies determining export potential based on past performance. Products that are performing well, as measured by high export values, are consequently perceived as having high potential for future export profitability (Freudenberg *et al.*, 2005).

3.4.2.1.1. Exports in value

The main assumption of this indicator is that those products that have high values of exports have greater potential and present opportunities for future export growth

(Freudenberg *et al.*, 2008). This indicator assumes that those products with high export values relative to the other products have established themselves in foreign markets (Freudenberg *et al.*, 2008).

South Africa's exports were mainly dominated by the product category edible nuts not else specified (nes) whose export value in 2006 was US\$42 177 000, substantially greater than all the other products. Desiccated coconuts, shelled almonds and in-shell almonds also rank among the top products, although their export values are substantially lower than that of the nuts (nes) (see Table 3.2).

Some products were not exported from South Africa in 2006 and these were Brazil nuts shelled and in shell, chestnuts and hazelnuts in shell. These products were recorded as having zero exports in 2006 as illustrated in Table 3.2. Products with low export values relative to the other products were shelled walnuts (US\$10 000), pistachios (US\$12 000) and in-shell cashew nuts (US\$16 000). The trends in South Africa's existing exports highlighted potential in the product category edible nuts (nes). This is indicative of an established market for this product relative to the other product in this group and potential for future export success.

3.4.2.1.2. World market share

The world market share indicator highlights each product's position or market share in world markets. This indicator assessed the competitiveness of each edible nut product and reflected on the export potential of each product. South Africa's exports in 2006 represented 0.44% of world exports (Trade Map, 2008). A product that had a share in world exports that was greater than 0.44% would be rated as an over performer and hence assumed to possess high export potential. In contrast, a product that had a share in world markets that was less than 0.44% would be rated as an under performer and hence assumed to possess little export potential (Freudenberg *et al.*, 2007).

Nuts (nes) were rated as the only over performer in this category with a share in world exports of 5.2%, as illustrated in Table 3.2. This implies that the market for this product is competitive and that it has high potential for export success. South Africa is an under performer in world markets in its exports of desiccated coconuts (0.08%), coconuts excluding desiccated (0.03%), shelled almonds (0.01%), almonds in shell (0.03%) and

walnuts in shell (0.01%) (see Table 3.2). South Africa has no share in world trade for the following products: Brazil nuts, chestnuts, hazel nuts in shell, shelled walnuts and pistachios (see Table 3.3).

3.4.2.1.3. Export growth

High growth rates over the five-year period 2002 to 2006 imply a competitive position for South Africa in world markets. It is assumed that all positive growth rates are indicative of potential export success for the South African economy (Freudenbberg *et al.*, 2008).

South Africa's exports of cashew nuts in shell grew at a rate of 99% during the five-year period from 2002 to 2006, indicating high potential for export profitability. Exceptional growth was also experienced in the market for shelled cashew nuts (64%), shelled almond (40%) and pistachios (35%). All the other products experienced positive growth with the exception of shelled hazel nuts, which had a negative growth rate of -4% (see Table 3.2). Export growth has an implication on the country's net position as an exporter or as an importer. If exports increase relative to imports, then an economy becomes a net exporter and experiences a positive trade balance; likewise, if its imports grow faster than exports, an economy becomes a net importer and has a negative trade balance.

3.4.2.1.4. Relative trade balance

The last component of the current export performance sub-index is the relative trade balance indicator. This indicator measures the net difference between South Africa's exports and imports of each edible nut product. A positive trade balance is experienced if exports of each edible nut product exceed the imports. This entails that local consumption of the product is less than the total production and hence a surplus that can be exported and that the sector is viable for export success. A negative trade balance is experienced if the domestic production is not sufficient for local consumption, implying that imports supplement the shortfall in production.

A trade surplus of 86.5% was experienced in 2006 for the product nuts (nes) (see Table 3.2). All other products experienced negative trade balances, implying that South Africa is a net importer of those products and that local production is not sufficient to meet local consumption.

Table 3.2: Components of the current export performance index

HS Code	Product label	Exports in value in 2006 US\$ 000	Share of SA exports in world exports in 2006 %	Growth of SA exports in value 2002-2006 %	Imports value in 2006 in US\$ 000	Relative trade balance %
080111	Coconuts, desiccated	219	0.08	27	3597	-88.52
080132	Cashew nuts, without shell	33	0	64	10418	-99.37
080119	Coconuts, excluding desiccated	29	0.03	2	214	-76.13
080131	Cashew nuts, in shell	16	0	99	1282	-97.53
080122	Brazil nuts, without shell	-	-	-	1303	-100
080121	Brazil nuts, in shell	-	-	-	15	-100
080290	Nuts edible, nes	42177	5.2	18	3037	86.57
080212	Almonds, shelled or peeled	122	0.01	40	9740	-97.53
080211	Almonds in shell	104	0.03	-	579	-69.55
080222	Hazelnuts shelled or peeled	21	0	-4	3361	-98.76
080231	Walnuts in shell	19	0.01	1	198	-82.49
080250	Pistachios	12	0	35	873	-97.29
080232	Walnuts, shelled or peeled	10	0	22	529	-96.29
080240	Chestnuts	-	-	-	6	-100
080221	Hazelnuts in shell	-	-	-	123	-100

Source: Adapted from ITC – TradeMap statistics, 2008

3.4.2.2. Composite index 2: The world markets index

The second sub-index is the world markets index. It measures the performance of the selected products in the world market. In this sub-index, the world market of each edible nut product was evaluated by assessing the size of world imports (quantities and values) and the dynamism of world imports between 2002 and 2006.

3.4.2.2.1. Size of world imports

World imports measure the size of the world market for each product both in value and in quantity. The size of world demand for a product reflects the size of the market for that product. It is thus assumed that world imports can be used to predict future trends and as a result, products with high world imports are likely to have more export potential in the future than those products with low world imports (Freudenberg *et al.*, 2008). High scores for this index are assigned if world markets for the product are large in terms of world import values and volumes. World import volumes of each edible nut product are included in the evaluation to assess absolute market size. This is because import values are subject to transportation costs, tariffs and exchange rate variations, which increase the cost of imports and not necessarily the value of the imports.

From Table 3.3, it is evident that shelled almonds have the largest world market share in value, worth US\$2 498 566 000. Similarly, shelled cashew nuts, shelled hazelnuts and nuts (nes) also have a substantive market share in value. On the other hand, Brazil nuts in shell have the smallest world market share relative to the other products, indicating low potential for future exports. Other products with low import values, include hazel nuts in shell (US\$7 5018 000), coconuts excluding desiccated (US\$102 223 000), Brazil nuts in shell (US\$19 293 000) and chestnuts (US\$21,363 000) (see Table 3.3).

The product with the largest market in the world in terms of quantity is cashew nuts in shell. Nuts (nes) (417 518 tons), shelled almonds (397 366 tons), pistachios (303 279 tons) and coconuts excluding desiccated (300 915 tons) rank high as the top imported products by quantity in the world. The least imported products in the world market, in order are, Brazil nuts in shell (14 547 tons), shelled Brazil nuts (28 754 tons), hazel nuts in shell (30 547 tons), almond in shell (68 270 tons) and chestnuts (112 933 tons), as illustrated in Table 3.4. Under this indicator, export potential for the South African economy lies in shell cashew nuts and nuts (nes) based on size of world imports. The size of world imports of cashew nuts in shell shows the potential size of export sales for the South African economy and hence potential for export success.

3.4.2.2.2. Dynamism of world imports

There exists a positive correlation between the presence of dynamic markets and future export growth (Freudenberg *et al.*, 2005). If products experience high growth in world markets the probability of future growth in exports is high. Additionally, fast-growing markets have higher opportunities for high returns for exporters. Therefore, a high index value is assigned to products whose markets are dynamic. Growth rates of world imports are measured for both the value (US dollar) and quantity (tons) of world imports.

Table 3.3: Components of the world markets index

HS Code	Product label	World imports in value in 2006 US\$ 000	Growth in world imports in value 2002-2006 %	World imports in quantity in 2006 tons	Growth in world imports in quantity 2002-2006 %
080132	Cashew nuts, without shell,	1336878	17	297511	19
080131	Cashew nuts, in shell	455627	13	636204	11
080111	Coconuts, desiccated	236428	7	256370	10
080122	Brazil nuts, without shell	121600	31	28754	10
080119	Coconuts, excluding desiccated	102223	11	300915	8
080121	Brazil nuts, in shell	19293	9	14574	6
080290	Nuts edible, nes	1006816	22	417518	4
080212	Almonds, shelled or peeled	2498566	28	397366	3
080211	Almonds in shell	242460	28	68270	2
080222	Hazelnuts shelled or peeled	1167064	25	179677	1
080231	Walnuts in shell,	276955	20	112331	1
080250	Pistachios	1489186	17	303279	-2
080232	Walnuts shelled or peeled	641991	23	125019	-6
080240	Chestnuts,	213637	0	112933	-6
080221	Hazelnuts in shell fresh	75018	14	30547	-8

Source: Adapted from ITC statistics, 2008

The world demand for shelled Brazil nuts in value increased at a rate of 31% between 2002 and 2006, making it the most dynamic product among the other products. High growth in world demand was also experienced in shelled almonds and shelled hazelnuts (28% and 25% respectively). Other top performers include shelled walnut (23%), nuts (nes) (22%) and in shell walnut (20%). Chestnuts, on the other hand, experienced zero growth in world demand, making it the least dynamic product. Relatively low growth was also experienced in desiccated coconuts (7%) and Brazil nuts in shell (9%).

Table 3.3 illustrates the top performing product in world markets in terms of growth in world demand by quantity to be shelled cashew nuts, which grew at an average rate of 19% between 2002 and 2006. Cashew nuts in shell ranked second with a growth rate of 11%, while desiccated coconuts and shelled Brazil nuts' world demand in quantity grew by 19%. In contrast to these positive changes in world demand, negative growth was experienced in the market for hazel nuts (-7%), chestnuts (-6%), shelled walnuts (-6%) and pistachios (-2%).

3.4.2.3. Composite index 3: The production index

The production index assesses the size of production dimension. In this way, this index attempts to highlight which of the products South Africa produces and hence has a comparative advantage. If a product is produced in South Africa, then South Africa is considered to have a comparative advantage and production capacity. This indicator acts as a selection constraint, which is based on the economy's ability to produce the product commercially and is limited to the share of production indicator given the available statistics. The production index will be estimated by looking at South Africa's share of production in world production for each product.

As illustrated in Table 3.4, nuts (nes) were the only product that South Africa produced in 2006. The production quantity of this product from South Africa was 12 000 tons and its share in world production was 1.67%. This highlights the economy's capacity and capability to produce nuts (nes), which includes macadamia nuts. All other products assessed in this study are not commercially produced in South Africa and hence South Africa lacks existing capacity for production and a comparative advantage.

Table 3.4: South Africa's share in world production

Product	<i>For information:</i> World production quantity 2006 (tons)	South Africa' s production in 2006 (tons)	Share of South Africa's production in world production in 2006
Almonds	1999783	0	0
Brazil nuts	74000	0	0
Cashew nuts	3218349	0	0
Chestnuts	1171168	0	0
Coconuts	55300185	0	0
Hazel nuts	958501	0	0
Nuts nes	717922	12000	1.67
Pistachios	524112	0	0
Walnuts	1689957	0	0

Source: FAO statistics, 2008

3.4.3. Compiling the export potential index for South African edible nuts (SITC 0577)

3.4.3.1. South Africa's current export performance index

Table 3.5 illustrates the index values of each of the indicators in the current export performance index. Nuts (nes) had the highest overall current export performance index owing to its high export values, share in world exports and positive relative trade balance (see Section 3.4.2.1).

Table 3.5: Current export performance index

HS Code	Product label	Index: South Africa's exports in value in 2006 US\$ 000	Index: Share of SA exports in world exports in 2006	Index: Growth of SA exports in value 2002-2006 %	Index: Relative trade balance %	Current export performance index
080111	Coconuts, desiccated	1.02	1.06	2.69	1.25	1.50
080119	Coconuts, excluding desiccated	1.00	1.02	1.13	1.51	1.17
080121	Brazil nuts, in shell				1.00	1.00
080122	Brazil nuts, without shell				1.00	1.00
080131	Cashew nuts, in shell	1.00	1.00	5.00	1.05	2.01
080132	Cashew nuts, without shell	1.00	1.00	5.00	1.01	2.00
080211	Almonds in shell	1.01	1.02		1.65	1.23
080212	Almonds, shelled or peeled	1.01	1.01	3.50	1.05	1.64
080221	Hazelnuts in shell				1.00	1.00
080222	Hazelnuts , shelled or peeled	1.00	1.00	1.00	1.03	1.01
080231	Walnuts in shell, fresh or dried	1.00	1.01	1.06	1.38	1.11
080232	Walnuts, shelled or peeled	1.00	1.00	2.38	1.08	1.36
080240	Chestnuts				1.00	1.00
080250	Pistachios	1.00	1.00	3.19	1.06	1.56
080290	Nuts edible, nes	5.00	5.00	2.13	5.00	4.28

Source: Own adapted from ITC statistics, 2008

Cashew nuts in shell and shelled or peeled cashew nuts rank second and third respectively in the current export performance index, owing to their high growth in value of South Africa's exports between 2002 and 2006 (see Section 3.4.2.1). In contrast, Brazil nuts in shell, shelled Brazil nuts, hazelnuts in shell and chestnuts rank low on South Africa's current export performance, mainly due to there being no exports of these products from South Africa (see Section 3.4.2.1). Based on South Africa's existing exports of each product, existing export potential lies in nuts (nes) (HS 080290).

3.4.3.2. The world markets index

The world markets sub-index illustrated in Table 3.6 examined the international market for each of the products in order to get an indication of the growth prospects and the size of the world market for each product. The world markets were particularly favourable for

shelled almonds and this is attributed to the relatively high growth in the value of world imports (see Section 3.4.2.2). The world demand in quantity of shelled cashew nuts and cashew nuts in shell was growing at a high rate, earning the products the second and third rank in the world markets index, respectively. However, chestnuts and hazelnuts in shell have a small world market share and low growth rates owing to the low values and volumes in world imports (see Section 3.4.2.2). Brazil nuts in shell have low import values and quantity in the world market despite having relatively high growth in world import quantity.

Table 3.6: World markets index

HS Code	Product label	Index: World imports in value in 2006 US\$ 000	Index: World imports in quantity in 2006 tons	Index: Growth in world imports in value 2002-2006%	Index: Growth in world imports in quantity 2002-2006%	World markets index
080132	Cashew nuts, without shell	3.13	2.82	3.19	5.00	3.53
080131	Cashew nuts, in shell	1.70	5.00	2.68	3.81	3.30
080111	Coconuts, desiccated	1.35	2.56	1.90	3.67	2.37
080122	Brazil nuts, without shell	1.17	1.09	5.00	3.67	2.73
080119	Coconuts, excluding desiccated	1.13	2.84	2.42	3.37	2.44
080121	Brazil nuts, in shell	1.00	1.00	2.16	3.07	1.81
080290	Nuts edible, nes	2.59	3.59	3.84	2.78	3.20
080212	Almonds, shelled or peeled	5.00	3.46	4.61	2.63	3.93
080211	Almonds in shell	1.36	1.35	4.61	2.48	2.45
080222	Hazelnuts shelled or peeled	2.85	2.06	4.23	2.33	2.87
080231	Walnuts in shell	1.42	1.63	3.58	2.33	2.24
080250	Pistachios	3.37	2.86	3.19	1.89	2.83
080232	Walnuts, shelled or peeled	2.00	1.71	3.97	1.30	2.24
080240	Chestnuts	1.31	1.63	1.00	1.30	1.31
080221	Hazelnuts in shell	1.09	1.10	2.81	1.00	1.50

Source: Own, adapted from ITC statistics, 2008

3.4.3.3. The production index

The production index assessed the size of production of each product in South Africa and attempted to highlight in which products South Africa had a comparative advantage. In this sub-index, nuts (nes) was the only product that was produced in South Africa at

internationally comparable level contributing to 1.67% of world production, as illustrated in Table 3.7.

Table 3.7: Production index

Product	Share of South Africa's production in world production in 2006	Index: Share of South Africa's production in world production in 2006	Production index
Almonds	0	1	1
Brazil nuts	0	1	1
Cashew nuts	0	1	1
Chestnuts	0	1	1
Coconuts	0	1	1
Hazel nuts	0	1	1
Nuts nes	1.67	5	5
Pistachios	0	1	1
Walnuts	0	1	1

Source: Adapted from FAO statistics, 2008

3.4.4 South Africa's export potential index

To compile the export potential index, the averages of the each product that are sub-divided based on whether the nuts are shelled or in shell, were averaged to obtain a value for each sub-index, for example an average of desiccated coconuts and coconuts excluding desiccated to obtain a current export performance index for the product coconuts.

The results from the export potential scan provide a platform for selecting a product with high potential for export success. A product with the most export potential based on the export potential index will be selected for further market assessment for export promotion. Based on the export potential index illustrated in Table 3.8, the product group nuts (nes) (HS 080290), with an index score of 4.16, was identified as the product with the highest export potential for South Africa.

Table 3.8: Export potential index

Product	Average current export performance index	Average world markets index	Production index	Export potential index
Almonds	1.44	3.19	1	1.88
Brazil nuts	1	2.27	1	1.42
Cashew nuts	2.01	3.42	1	2.14
Chestnuts	1	1.31	1	1.10
Coconuts	1.33	2.41	1	1.58
Hazel nuts	1	2.18	1	1.39
Nuts nes	4.28	3.2	5	4.16
Pistachios	1.56	2.83	1	1.80
Walnuts	1.24	2.24	1	1.49

Source: Own source, 2008

3.4.4.1. HS 080290: nuts edible, not else specified

Prior to the 2007, revision of the HS classifications, macadamia nuts did not have a sub-heading under the HS system and were classified under HS 080290: nuts edible fresh or dried, whether or not shelled or peeled not else specified. The Australian Customs Service (ACS) made an application to appeal for amendments to the HS heading 0802 to include a sub-heading for macadamia nuts, pointing out the large volumes of imports and exports in world trade of this product as the main justification (Anon, 2002). Yielding to this request, the 2007 revision of the HS system included the sub-heading HS 080260: macadamia nuts under the four-digit heading HS 0802 and resulted in the availability of data for macadamia nuts from 2007.

According to Delachenal (2008) the product code HS 080290 is a national tariff line and this implies that the classifications of products under this code are not harmonised between countries. Different products are classified under the HS 080290 code, depending on which country's data it is. For example, in the United States of America products under the national tariff line 080290 include pecans, pignolia and kola nuts, while in Pakistan it covers areca nuts and in South Africa it is classified as nuts, fresh or dried, whether or not shelled or peeled (excluding coconuts, Brazil nuts, cashew nuts, almonds, hazelnuts, walnuts, chestnuts "castania spp.", pistachios and macadamia nuts) (TradeMap, 2008).

South African macadamia nuts were classified under HS 080290, and this can be shown by a substantive decrease in the trade value of the product HS 080290 between 2006 and 2007, as illustrated in Table 3.9. Variations in the export values of HS 080290 between 2006 and 2007 can be attributed to the fact that macadamia nuts HS 080260 were aggregated under the HS code 080290. This fact is more evident in South Africa's 2008 export values (see Table 3.9) where macadamia nuts (HS 080260) accounted for 71% of the total exported value of the product category. Further evidence for this is substantiated by the ITC's Frequently Asked Questions (FAQ) on the Trade Map website, which explains how HS headings can be matched with corresponding codes after revisions to the HS classifications (Trade Map, 2008).

Table 3.9: List of corresponding products to HS 080290, in the 1996, 2002 or 2007 HS revision: Exports by South Africa

HS	Product label	Exported value in 2004, US\$ 000	Exported value in 2005, US\$ 000	Exported value in 2006, US\$ 000	Exported value in 2007, US\$ 000	Exported value in 2008 US\$ 000
	Total	31244	62779	41616	41324	44888
080260	Macadamia nuts, fresh or dried, whether or not shelled or peeled, not elsewhere specified				14964	32034
080290	Nuts edible, fresh or dried, whether or not shelled or peeled, not elsewhere specified	31244	62779	41616	26360	12854

Source: ITC TradeMap, 2008.

Since trade data for macadamia nuts was only available from 2007, the existing data (from 2007 for macadamia nuts) could only be used to assess market size (as measured by import values and quantities) of each potential target market (Delachenal, 2008). The available trade statistics for macadamia nuts (HS 080260) were not adequate to calculate growth rates (over five years) that were required in the analysis for this study. In order to assess the export potential of the edible nuts and analyse potential markets, data were used for the product group HS 080290, under which macadamia nuts were classified prior to the 2007 revision of the HS headings (see Section 4.7).

Market research on one product would be easier and more relevant as data on all the nut categories in HS 080290: nuts (not elsewhere specified) are not available for the South African (Bekker, 2009). Based on the above-mentioned reasons, a specific product, namely macadamia nuts, was chosen as the identified product with the highest export potential in the edible nuts group under SITC 0577. Macadamia nuts are going to be further analysed to develop a market profile that will outline the specific market to which the product can be exported and marketed. A summary of this chapter will be provided in the next section.

3.5. Summary

In this chapter the export potential of South African edible nuts was assessed. This was achieved by building a composite export potential index. The composite export potential index comprises three indices.

The variables used in each sub-index were on different scales of measurement. Comparison of these variables and the compilation of an index could only be done when these variables were standardised to change them into an index value. The sub-indices were weighted equally with no particular composite indicator being more important than the others, as there is no particular theoretical or empirical evidence that guided the assignment of weights.

The ITC's method, adopted in this study, was based on HS data; the corresponding HS codes of SITC 077 were used in the further analysis of the data. SITC 0577: edible nuts were converted to its corresponding HS codes. This study assessed the export potential of the two product categories at an HS six-digit level of HS 0801 and HS 0802. The HS product specific data was used in this study because governments, the private sector, international organisations and customs authorities use the HS classification extensively as compared to the SITC. The results of this study would therefore be more beneficial to the various stakeholders if product-specific information was provided.

South Africa's current export performance index revealed that South Africa's exports were mainly dominated by the product category nuts edible not elsewhere specified (nes), desiccated coconuts, shelled almonds and in-shell almonds. Some products were not exported from South Africa in 2006 and these were Brazil nuts shelled and in shell, chestnuts and

hazelnuts in shell. Under the world market share indicator nuts (nes) were rated as the only over performer in this category. South Africa was an under performer in world markets in its exports of desiccated coconuts, coconuts excluding desiccated, shelled almonds, almonds in shell and walnuts in shell. South Africa had no share in world trade for the following products: Brazil nuts, chestnuts, hazel nuts in shell, shelled walnuts and pistachios. A positive trade surplus was experienced in 2006 for the product nuts (nes). All other products experienced negative trade balances, implying that South Africa is a net importer of those products and that local production is not sufficient to meet local consumption.

The second sub-index was the world markets index. From an analysis of the world markets index shelled almonds were revealed to have the largest world market share in value. Similarly, shelled cashew nuts, shelled hazelnuts and nuts (nes) also had substantive market share in value. The product with the largest market in the world in terms of quantity was cashew nuts in shell. The world demand for shelled Brazil nuts in value increased the most making it the most dynamic product among the other products. High growth in world demand was also experienced in shelled almonds, shelled hazelnuts shelled walnuts and nuts (nes).

The production index assessed the size of production dimension. Nuts (nes) were the only product that South Africa produced in 2006. All other products assessed in this study were not commercially produced in South Africa and hence South Africa lacked existing capacity for production and a comparative advantage.

Based on the export potential index the product group nuts (nes) (HS 080290) were identified as the product with the highest export potential for South Africa. Prior to the 2007, revision of the HS classifications, macadamia nuts did not have a sub-heading under the HS system and were classified under HS 080290: nuts edible fresh or dried, whether or not shelled or peeled not else specified. South African macadamia nuts were classified under HS 080290, and this can be shown by a substantive decrease in the trade value of the product HS 080290 between 2006 and 2007. Macadamia nuts were thus chosen as the product with the highest export potential and will be further analysed to develop a market profile that will outline the specific market to which the product can be exported and marketed. Chapter four will focus on choosing and understanding a potential target market for South African macadamia nuts.

CHAPTER 4

A MARKET PROFILE: THE EXPORT OF SOUTH AFRICAN MACADAMIA NUTS TO GERMANY

CHAPTER 4: A MARKET PROFILE: THE EXPORT OF SOUTH AFRICAN MACADAMIA NUTS TO GERMANY

4.1. Introduction

An evaluation of the export potential of South African edible nuts (SITC 0577) revealed that macadamia nuts (HS 080260) had the highest export potential. In Chapter 4 an in-depth investigation will be undertaken to define and describe the product, macadamia nuts, in detail taking into account the production, processing and product forms. A potential target market, for macadamia nuts, will be selected based on an analysis of trade and market access statistics. The investigation will be taken further to establish what the market entry requirements in the target market are in order to assist South African exporters to increase the probability of export success (see Section 2.4.1.6). The rest of this chapter will be outlined as follows; Section 4.2 will provide a product overview. This will include the product description, production conditions, processing and uses of macadamia nuts. An overview of macadamia nut production globally and in South Africa will be provided in Sections 4.3 and 4.4. Section 4.5 will provide an insight into the structure of the South African macadamia nut industry. Sections 4.6 and 4.7 will assess the world markets for the product and identify the most suitable target market. Market characteristics of the target market will be analysed in Sections 4.8 and 4.9. Lastly this chapter will provide a conclusion with a summary in Section 4.10.

4.2. Product overview of macadamia nuts

4.2.1. Product description

This market profile provides an overview of an in-depth investigation of the product:

- HS 0802: nuts not elsewhere specified (nes).
- HS 080260: Macadamia nuts, fresh or dried, whether or not shelled or peeled, not elsewhere specified.

Macadamia nuts belong to the *Proteaceae* species of which only two varieties, the *macadamia integrifolia* and the *macadamia tetraphylla*, are edible (McHargue, 1996). Macadamia nut trees are smooth, tall and evergreen with lance-like leaves. The trees grow to heights of 12 to 15 meters tall and start bearing fruit, on average three to five

years after planting (Cooper, 1998). The fruits are seeded follicles of about 3.81 centimetres in diameter with a leathery outer husk that covers an inner fibrous, woody and thick shell, which is cracked to reveal the inner edible kernel (Magness, Markle & Compton, 1971).

Macadamia nuts are native to the Australian rainforests and were first discovered in 1857 (Duke, 1983). Macadamia nuts are grown in Australia, Brazil, Israel, Thailand, the United States of America (Hawaii and California), Kenya, Malawi, Swaziland, South Africa, Zimbabwe, Costa Rica, New Zealand and Guatemala (The Cracker, April 2000). South Africa grows the macadamia *integrifolia* variety (SAMAC, 2008) which is set apart by its smooth outer shell as compared to the rough-shelled *tetraphylla*. Macadamia nuts are perceived to be a luxury nut and considered by many to be the prime edible nut (California Rare Fruit Growers, 1997). Globally, macadamia nuts are the most expensive edible nut and can fetch a price that is double that of cashew nuts (Fruit Inform, 2008).

Consumption of macadamias has been proven to have many associated health benefits, which cannot be attributed to one property of the nuts, but to various nutrients that make up their chemical composition (Moodley, Kindness & Jonnalagadda, 2007). Research has shown that macadamia nuts contain 80% oil of which 1.6% is polyunsaturated fatty acids, which augment the breakdown of cholesterol and therefore reduce the risk of associated coronary heart diseases (Curb, Wergowske, Dobbs, Abbot & Huang, 2000; Garg, Blake & Willis, 2003).

4.2.2. Production conditions

Optimal climatic conditions for the production of macadamia nuts are found to be in tropical and sub-tropical regions. Ideal temperatures range between 10 and 30° C with no frost. This is because young trees can be damaged if temperatures fall below -2.8° C (McConachie, 1997). Humidity should be between 40 and 80% with abundant rainfall of between 800 and 1200 millilitres per year (California Rare Fruit Growers Inc, 1997). Sufficient water supply is essential for macadamia production and irrigation may be supplemented in case of low rainfall or during months with periodic droughts throughout the year (Magness, Markele & Compton, 1971). Supplementary irrigation will assist especially in the case of young trees, to help bring them into production sooner. Macadamia nuts can be grown on a wide range of soil types, which should generally be

well drained. Intensive soil management should be done in the case of soils with poor water retention, low fertility; leaching and low organic content (Samson, 1986). Macadamia nut tree plantations should be endowed with wind protection as the trees are prone to wind damage, although their wood is hard, it is brittle (McConachie, 1997). Wind protection can be in the form of rows of trees that grow fast and can lessen the effect of the wind on the trees (Mason, 1982).

Research conducted at the Southern Cross University's Centre for Regional Climate Change Studies in Australia insinuated that macadamia trees are able to retain up to four tons of carbon dioxide per hectare, per year (Anon, 2008). This suggests that apart from the commercial gains from selling macadamia nuts, plantations could also go a long way in reducing the adverse effects of global warming on the environment.

4.2.3. Processing of macadamia nuts

Mature nuts fall to the ground and can be handpicked. The green husk splits open as the nut matures. It accounts for about 50% of the weight of the nut, while the kernel only makes up 15% of the weight (Macadamia Nut Company of Hawaii, 2008). Once the nuts have been handpicked from the ground, they should be dehusked, usually mechanically, within 24 hours of harvest to prevent heat respiration and moulding (Duke, 1983). The dehusked nuts have a water content of up to 50% that fills up the inner shell of the nut and this makes it difficult to crack the nuts immediately (Macadamia Nut Company of Hawaii, 2008). As a result of this, the dehusked nuts must be dried to reduce excess moisture and only after that can they be shelled.

The drying process takes up to three weeks. During this time the moisture content of the nuts falls to around 1.5% and the kernel shrinks away from the inside of the shell (Anon, 2008). The drying process removes excess water in the kernel, which enhances the flavour and texture of the nuts (Cooper, 1998; Mchargue, 1996). Once the nuts have been dried, the inner shell can easily be cracked mechanically to expose the edible inner creamy macadamia kernel (Janick, 2002). Further roasting at various temperatures enhances the taste, texture as well as the shelf life of the nuts (Oriodan, Forde & McConochie, 2001). Due to this, care must be taken when processing the nuts in order to maximise the flavour and shelf life of the nuts (Prichavudhi & Yamamoto, 1987).

4.2.4. Uses of macadamia nuts

Macadamia nuts are consumed raw, roasted or salted as a snack. The oil of the macadamia is becoming an increasingly popular by-product of the nuts. Other uses of the product are as an ingredient in following:

- Bakery;
- Salads and snacks;
- The chocolate confectionary industry;
- Ice cream;
- Health bars, muesli bars or multi-fruit bars;
- Pet-food;
- Baby-food; and
- Exotic dishes (Center For The Promotion Of Imports From Developing Countries (CBI), 2005).

4.3. Global overview of macadamia nut production

According to the Cracker magazine (2000) fourteen countries in the world produce macadamia nuts. New producers such as China have emerged among the top producers of macadamia nuts worldwide. Table 4.1 summarises the estimates of world production patterns. These estimates highlight Australia as the leading producer of macadamia nuts in the world with an annual production of 10 500 tons of macadamia nut kernels in 2008. South Africa is the second leading producer of macadamia nut kernels in the world, accounting for 5 600 tons of kernel in 2008. However, according to 2007/8 statistics, actual production of macadamia nut kernels in South Africa exceeded the estimates and amounted to 6 062 tons of sound kernels (South African Subtropical Growers Association, 2009).

Table 4.1: Estimated world macadamia production on a kernel basis measured in metric tons

Country	Estimated world macadamia production (kernel, metric tons)				
	2004	2005	2006	2007	2008
Australia	12600	10000	12200	11600	10500
South Africa	3063	4205	4480	4902	5600
USA (Hawaii)	4750	5200	5500	3750	3750
Kenya	1650	1800	2052	2000	2000
Malawi	1150	1595	1100	1468	1523
Guatemala	1000	1200	1250	1230	1250
Brazil	500	665	750	900	750
Costa Rica	250	200	100	200	200
Zimbabwe		225	208	100	100
Others	200	400	400	450	450
World Total	25163	25490	28040	26600	26123

Source: Bekker and Lee, 2008.

Other main macadamia nut producers in the world and their respective production quantities in 2008 included Hawaii (3 750 tons), Kenya (2 000 tons), Malawi (1 523 tons) and Guatemala (1 250 tons). Brazil, Costa Rica and Zimbabwe produced smaller quantities of macadamia kernels in comparison to the leading producers. South Africa and Kenya have experienced constant growth in production since 2004 compared to Australia, Hawaii, and Malawi, whose production values fluctuated in the same period (see Table 4.1).

4.4. Macadamia nut production in South Africa

The production of macadamia nuts in South Africa is mainly centralised in three provinces, namely Limpopo, Mpumalanga and KwaZulu Natal. Production is concentrated in Levubu and Tzaneen in the Limpopo province, from Hazyview to Barberton in Mpumalanga and the coastal region in KwaZulu Natal (Southern African Macadamia Growers' Association, 2007). The total amount of Wet in Shell (WIS) macadamia nuts produced in South Africa was 23 122 tons between 2007 and 2008. The Limpopo province was the leading producer, accounting for 10 988 tons of WIS macadamia nuts. The Mpumalanga province accounted for 10 040 tons, while in contrast the KwaZulu Natal province only produced 2 084 tons of WIS macadamias in the same period (see Table 4.2). During the same period, South Africa produced a total of 21 233 tons Dry in Shell (DIS) macadamias (see Table 4.2).

Despite producing almost 1 000 tons more than the Mpumalanga province (3 099 tones), the Limpopo province produced less Total Kernel (TK) or cracked macadamia nuts (3 092 tons). The Limpopo province had the lowest rate of Sound Kernel Recovery (SKR %) of 26.12% compared to the 30.49% in Mpumalanga and 32.31% in KwaZulu Natal. Consequently, the Limpopo province had the lowest Total Kernel Recovery (TKR %) (30.37%) compared to the Mpumalanga (33.71%) and the KwaZulu Natal provinces (37.67%) (see Table 4.2). This is mainly attributed to three main causes of unsound kernels in South Africa; the early and late stinkbug damage and kernel discoloration and high temperatures during the flowering season, which compromise the quality and size of the nuts. The occurrence of early and late stinkbug damage resulted in losses of 410 tons of kernel and R26.65million in value in 2008 (Bekker, 2008). These factors create a need for scout training and effective farm management (Bekker, 2008, Bekker, 2009).

Table 4.2: Macadamia nut production in South Africa by region in 2008

South Africa				
	Limpopo	Mpumalanga	KZN	Total RSA
WIS (kg)	10 988 270	10 040 027	2 084 092	23 112 389
DIS (kg)	10 181 756	9 913 912	1 857 592	21 233 260
SK (kg)	2 658 979	2 802 923	600 184.9	6 062 087.2
USK (kg)	433 172	207 543	99 659.8	740 374.7
TK (kg)	3 092 151	3 099 308	699 844.7	6 802 461.7
SKR%	26.12	30.49	32.31	28.55
USKR%	4.25	2.26	5.36	3.49
TKR%	30.37	33.71	37.67	32.04

Source: Adopted from Bekker, 2009

WIS = Wet-in-shell;

DIS = Dry-in-shell;

SK = Sound kernel;

USK = Unsound kernel;

TK = Total kernel;

SKR% = Sound kernel recovery %

USKR % = Unsound kernel recovery %

TKR %: Total kernel recovery %

The Unsound Kernel Recovery Rate (USKR) decreased (3.5%) compared to the past season, indicating an increase in the volume of kernel recovered for the DIS nuts and better quality in the nuts (Bekker, 2009). South Africa's production overall increased at a rate of 13.5% in 2008 from the previous year (Bekker, 2009). In total, the production of

DIS macadamia nuts in Limpopo increased by 0.5%, 25.6% in Mpumalanga and 47.5% in KwaZulu Natal (Bekker, 2009). These increases in production are mainly attributed to an extension of the existing plantations in these regions and also to the commercial maturation of new orchards (SAMAC, 2008).

4.5. The South African macadamia nut industry

The macadamia nut industry in South Africa is export based with 95% of the output being exported to foreign markets. The industry can thus be classified as a committed exporter (see Section 2.5) (SAMAC, 2008). Although 95% of production is exported, there exists great potential as the industry is among the fastest growing tree crop industries in South Africa, with both production (increased from 840 tons in 1996 to 18 172 tons in 2007) and total sales value (increased from R32 million in 1996 to R276 million in 2006) increasing substantially in the last 10 years (SAMAC, 2008). New macadamia tree plantings have increased the number of trees from about one million in 1996 to over four million in 2006, covering a total area of 12 000 hectares (Beker, 2009). A large number of young trees are yet to come into production and reach commercial maturity. This trend is expected to continue highlighting enormous growth prospects and development potential in this industry (SAMAC, 2008; Bekker 2009). According to forecasts done by the Bekker and Lee (2008) the South African macadamia nut industry is expected to grow by 92% by the year 2020.

Australia and Hawaii, the main producers of macadamia nuts and South Africa's largest competitors, have had unstable growth in production and a decrease in yield compared to other periods (Bekker & Lee, 2008). In the case of Australia, the strengthening of the Australian dollar against the US dollar has had adverse effects on the price that Australian macadamia nut producers earn per ton of macadamia nuts. Secondly, severe drought conditions in the past two seasons have resulted in an overall decline in production in Australia (Bekker *et al.*, 2008). These factors combined with South Africa's growth prospects ultimately strengthen South Africa's competitive position in the world market for macadamia nuts in the future, thus creating greater opportunities for the economy.

4.6. Market overview

4.6.1. Global trade of macadamia nuts

Analysing the global market gives an overview of the distribution of resources, countries that play a pivotal role in trade of the product and the localisation of potential target markets (Sampson, 2006). World exports of macadamia nuts in 2007 amounted to US\$156 482 000 (in value) and 37197 tons (in quantity). Table 4.3 illustrates that globally Australia is the largest exporter of macadamia nuts accounting for 44% and 46% of world exports in value and in quantity, respectively. Germany is the second largest exporter of macadamias accounting for 13% of world exports in value and a contrasting share in quantity of 4%. Ranking as the third largest exporter, South Africa accounts for almost 10% of the value of world exports of macadamia nuts. South Africa supplies the second largest quantity of macadamia nuts, contributing 28% of the quantity in world exports in 2007 (see Table 4.3). Other main exporters of macadamia nuts in the world, based on trade statistics, are Belgium, the Netherlands, Guatemala, Luxembourg, China, Hong Kong, Costa Rica and Canada (see Table 4.3). The unit value (export value/quantity) as a proxy of prices approximates average world price to be US\$4 207 per ton of macadamia nuts exported. Prices range from as high as US\$23 000 per ton in Austria to as low as US\$464 per ton in Zimbabwe.

Table 4.3: Top exporters of macadamia nuts in 2007

Exporters	Exported value in 2007	Share in value in world exports, 2007	Exported quantity in 2007	Share in quantity in world exports, 2007
	(US\$ 000)	%	tons	%
World	156482	100	37197	100
Australia	68252	43.6	17173	46.2
Germany	20362	13	1487	4.0
South Africa	14964	9.6	10231	27.5
Belgium	13517	8.6	1305	3.5
Netherlands	11551	7.4	1198	3.2
Guatemala	10411	6.7	1502	4.0
Luxembourg	4294	2.7	249	0.7
China	3225	2.1	1591	4.3
Hong Kong	1709	1.1	841	2.3
Costa Rica	1363	0.9	208	0.6
Canada	1286	0.8	173	0.5

Source: ITC Trade Map, 2008

The trade statistics depicted in Table 4.4 show that the top importer of macadamia nuts in the world in 2007 was the United States of America (USA), accounting for more than 25% of world imports in value. Germany is the second largest importer importing US\$27 455 000 worth of macadamia nuts and accounting for 15.7% of world imports. The top three main importers of macadamia nuts account for 50% of the value of world imports signalling that the market is concentrated. China imported 10 440 tons of macadamia nuts in 2007, taking up 32% of world exports in volume and this placed it as the leading importer in terms of quantity. The USA follows as the second largest importer in quantity accounting for 21% of world imports. Luxembourg, the Netherlands, Japan, Belgium, China, Spain, the United Kingdom and Australia were also among the top importers of macadamia nuts in 2007. The average import price paid for a ton of macadamia nuts in the world in 2007 was US\$5 358. Unit values (average import price) vary substantially ranging from the highest in the-world at US\$21 000 per ton in Romania to the lowest in Ireland at US\$891.

Table 4.4: Top importers of macadamia nuts in 2007

Importers	Imported value in 2007	Share in value in world imports, 2007	Imported quantity in 2007	Share in quantity in world imports, in 2007
	(US\$ 000)	%	tons	%
'World	175169	100	32693	100
USA	45357	25.9	6705	20.5
Germany	27455	15.7	2681	8.2
Luxembourg	18218	10.4	1221	3.7
Netherlands	16256	9.3	1856	5.7
Japan	14893	8.5	1688	5.2
Belgium	13394	7.6	1282	3.9
China	7743	4.4	10440	31.9
Spain	7212	4.1	941	2.9
United Kingdom	4028	2.3	500	1.5
Australia	2594	1.5	1158	3.5

Source: ITC Trade Map, 2008.

4.6.2 Key world market trends

Annual production of macadamia nuts for the period 2007/2008 increased substantially in Kenya and South Africa by 8% and 23% respectively. During the same period, production

in Australia decreased by 16%, forcing prices to rise in response to strong demand in the USA and in Europe (USDA, 2008).

According to a market survey conducted by CBI in 2007, imports of edible nuts in the European Union (EU) have been rising annually at a rate of 1.1 % since 2001. Consumption of edible nuts in the EU amounted to 3 443 000 tons in 2005, as illustrated in Table 4.5. The leading nut consuming countries were Germany, Italy, Spain, France, the Netherlands and the United Kingdom. These countries accounted for 80% of total edible nut consumption in 2005 (CBI, 2007).

Table 4.5: Consumption of edible nuts in the EU member states between 2001 and 2005

	2001 (000)tons	2002 (000)tons	2003 (000)tons	2004 (000)tons	2005 (000)tons	Annual change
Total EU	3294	3273	3308	3372	3443	1.1%

Source: CBI, 2007.

Additionally, mounting research on the associated health benefits obtained from the consumption of edible nuts has increased awareness among the consumers. This has resulted in the increase in the popularity and demand of luxury nuts such as macadamia nuts in the EU and the USA (USDA, 2008). As a result of these factors, the market for edible nuts has a lucrative niche that separates cheap private label products and premium products such as macadamia, as well as new exotic nuts for example the tropical almond (CBI, 2007). This avails opportunities for producers of these products to exploit such markets to achieve growth.

4.7. Identifying a target market for South African macadamia nuts

To identify a target market for macadamia nuts, a quantitative analysis will be employed to assess the market trends, import growth rates and market share of the potential markets. Given that trade data for macadamia nuts was only available from 2007, the existing data (from 2007 for macadamia nuts) can only be used to assess market size (as measured by import values and quantities) of each potential target market. The available trade statistics for macadamia nuts (HS080260) are not adequate to calculate growth

rates over five years, trends and share in the market for this product. Therefore, to analyse potential markets, data used will be for product group HS 080290, under which macadamia nuts was classified prior to the 2007 revision of the HS headings. The first element to be considered will be the market size of each market using the value of imports.

4.7.1. Market size and market share

4.7.1.1. South Africa's existing trade partners

The largest importers of South African nuts (nes) (HS 080290) are the USA and the Netherlands, whose import values in 2007 were substantially higher than the rest of the importers. These two countries imported US\$11 433 000 and US\$10 802 000 respectively worth of nuts (nes) and accounted for 53.8% of South Africa's exports (see Appendix 1). Spain and Japan follow with import values and share in South Africa's exports of US\$3 524 000 (8.5%) and US\$2 793 000 (6.8%). Other major destinations and their respective shares in South African exports of nuts (nes) were Germany (5.1%), the United Kingdom (3.9%), Hong Kong (3.4%), Vietnam (3.2%), Italy (2.8%) and France (2.1%). The top ten importers account for almost 90% of South Africa's exports (see Appendix 1).

4.7.1.2. World market

The USA was by far the largest importer of nuts (nes) in 2007, accounting for 28% of world imports. Italy and Germany are second and third respectively. Other interesting markets based on the size of their imports and share in world imports are Hong Kong, the United Kingdom, Pakistan, Spain, the Netherlands, China, Vietnam and Canada (see Appendix 2).

The USA and Italy together account for 35% of world imports of edible nuts and therefore are the most attractive markets based on share in world imports. Germany, Hong Kong and Italy also account for a relatively large share of the world imports of HS 080290 edible nuts (nes), and these markets are therefore considered as potential target markets.

4.7.2. Market trends

General trends in the world market may be reflective of whether a market is growing, declining or stable in a given period (Doyen, 2004). Emerging economies such as Vietnam, Egypt, Kenya and Pakistan were identified as potential target markets due to their high growth in imports since 2003. Egypt experienced an annual growth in value between 2006 and 2007 of 412%, while Kenya experienced an explosive rate of annual growth in value of 1806% in the same period.

Developed markets such as Germany and Italy experienced constant high growth rates of their import values and quantities since 2003. Hong Kong has also experienced constant high growth between 2003 and 2007 in value and in quantity and very high annual growth in value of 190% between 2006 and 2007 (see Table 4.6). Growth in the developed markets of the United Kingdom and Spain was positive over the five-year period. Their growth rates fluctuated and were below world annual growth rates for value between 2006 and 2007 at 8% for the United Kingdom as compared to the world average of 15% and 3% growth in quantity between 2003 and 2007 for Spain as compared to a world average of 7%.

Based on the market size, market growth trends and market share, twelve potential target markets were identified (see Table 4.6). These markets were selected on the basis of other factors, such as geographical proximity as in the case of Kenya and Egypt. Some markets were selected based on their potential as shown by their growth despite having a small market size, and these were Egypt, Kazakhstan and Estonia. Developed markets such as Italy, Germany, Hong Kong and the United Kingdom were selected because they performed well on all the indicators, that is, they have relatively large markets, high growth, and a large share in the world market (see Table 4.6). The USA, despite being the largest importer in size and in share of world imports, was not selected due to negative growth rates in quantity (see Appendix 1) and due to there being a lot of competition in the USA market for South African exporters of nuts (nes).

Table 4.6: Selected potential target markets

	Market size		Market trends			Market share
	Value imported in 2007, US\$ 000	Quantity imported in 2007, tons	Annual growth in value 2003-2007, %	Annual growth in quantity 2003-2007, %	Annual growth in value 2006-2007, %	Share in world imports, %
World	1177007	470340	15	7	15	100
Italy	85766	13010	25	25	45	7.29
Germany	77258	6892	33	23	25	6.56
Hong Kong	74311	21108	32	24	190	6.31
United Kingdom	65067	43311	20	74	8	5.53
Pakistan	54308	68457	79	64	44	4.61
Spain	53508	26241	20	3	44	4.55
Vietnam	42910	15041	175	83	164	3.65
Slovakia	2226	716	143	146	36	0.19
Kenya	972	3236	76	151	1806	0.08
Estonia	703	168	139	175	80	0.06
Kazakhstan	353	349	71	189	122	0.03
Egypt	302	45	170	92	412	0.03

Source: ITC TradeMap, 2008

4.7.3. Market access conditions

Market access conditions refer to the tariffs and market access barriers that exist in each potential market. Analysing the market access conditions will enable the elimination of the less transparent and highly protected markets and will allow for the selection of a target market in which South Africa has favourable and transparent market accessibility. The data used to assess the market accessibility of the twelve target market was obtained for the ITC's Market Access Map, which provides tariff-related data for products that are traded by almost 200 countries. This section will assess the tariff faced by South African macadamia nut exporters in each of our target markets and investigate whether or not South Africa has a tariff advantage in any market. In addition to this, market access conditions of South Africa's main competitors, on the basis of market size, growth, proximity and market share in each potential target market, will be assessed to establish South Africa's position in the potential market.

4.7.4. South Africa's market access conditions in potential markets

South African macadamia nuts' market access conditions are illustrated in Table 4.7. South Africa had preferential market access in the six potential European markets, namely Estonia, Germany, Italy, Slovakia, Spain and the United Kingdom. Preferential market access in these markets enables South African macadamia nuts to face no tariffs on entry into these markets. South African macadamias also faced a 0% tariff in Hong Kong.

The highest market access barrier for macadamia nuts originating from South Africa was 40% and was charged on entry into Vietnam (see Table 4.7). Despite having a geographical advantage to Kenya and Egypt, South African macadamias faced tariffs of 25% and 12% respectively in these markets. South African exporters of macadamia nuts faced a tariff of 10% in Pakistan.

4.7.5. Market access conditions for South Africa's competitors in potential target markets

In Egypt, South Africa's main competitor in terms of existing market size was the USA. Despite this, both South Africa and the USA faced a tariff of 12% in the Egyptian market. South Africa also faced the same tariff as all its main competitors in Estonia, Pakistan, the United Kingdom and Hong Kong, implying that there was no tariff advantage in these markets. In Germany, the Netherlands faced the same tariff (0%) as South Africa, while Australia faced a tariff of 2% relative to South Africa's 0% tariff. In addition to this, South Africa also had a tariff advantage and faced a 0% preferential tariff in Italy, Slovakia and Spain compared to its main competitor Australia, which faced a 2% tariff in these markets (see Table 4.7).

Table 4.7: Market access conditions in potential target markets

Potential market	Tariff faced by SA, %	Tariff advantage faced by SA	Main competitors in potential market	Tariff faced by competitors in potential market, %
Egypt	12	No data	USA	12
Estonia	0	Pref. tariff for SA	Lithuania	0
Germany	0	Pref. tariff for SA	Australia, Netherlands	2 0
Hong Kong	0	NIL	Australia, Guatemala	0 0
Italy	0	Pref. tariff for SA	Netherlands, Australia, Vietnam	0 2 0
Kazakhstan	5	NIL	Germany Iran	5 3.5
Kenya	25	NIL	Malawi Tanzania	0 0
Pakistan	10	NIL	Singapore	10
Slovakia	0	Pref. tariff for SA	Australia, France	2 0
Spain	0	Pref. tariff for SA	Germany, Australia	0 2
United Kingdom	0	Pref. tariff for SA	Luxembourg, Italy	0 0
Vietnam	40	No data	no data	no data

Source: ITC Market Access Map, 2008

Iran had a tariff advantage over South Africa in Kazakhstan, facing a tariff of 3.5% compared to South Africa's 5%. Other main competitors for South Africa who had a tariff advantage were Malawi and Tanzania in the Kenyan market, who faced no tariffs while South Africa faced a tariff of 25% (see Table 4.7).

4.7.6. Choosing a target market

Based on the assessment of each of the target markets' market access conditions and market characteristics, Vietnam and Kazakhstan were not selected as target markets for South African macadamia nuts. Despite having high import growth rates these markets had a small market (small import values) and low potential sales as shown by their share in the world market. South African macadamia nuts faced high market access barriers relative to the Kazakhstan market. Egypt and Kenya, in spite of them being geographically closer to South Africa and having high growth rates, had small markets and South African exports to these markets faced relatively high tariffs. Thus, these markets were not considered further as potential target markets. In contrast, South Africa faced a zero tariff in Estonia, but had no tariff advantage over its main competitor, Luxembourg, in this market. The market for macadamia nuts was relatively small in Estonia and hence its share in world imports was consequently small. Estonia was not an attractive target market based on these factors.

Pakistan, regardless of its relatively high market size, high market share and high growth in the world market, was eliminated as a possible target market because South Africa faced a tariff of 10% in Pakistan and this was relatively high compared to other markets. Furthermore, Pakistan was not an existing trade partner of South African edible nuts and this created the need for market research to establish the preferences of the Pakistani consumer, how to market the product and how to distribute the product.

In spite of having a large market and high growth rates, Hong Kong presented no tariff advantage to South African edible nuts (macadamia nuts). In addition to this, Australia and Guatemala, the world's main producers of macadamia nuts, were also key suppliers and therefore, competitors in Hong Kong. These countries' market shares were not substantially different from that of South Africa. South Africa faced competition in this market and Hong Kong was not considered further as a potential target market. Based on the analysis of market trends in the previous sections, four potential markets, namely Italy, Germany, Spain and the United Kingdom had potential in terms of size, growth and market accessibility. Germany, as a target market for South African macadamia nuts, was chosen based on a combination of qualitative and quantitative assessment of market trends and these factors are further discussed in the following section.

4.7.6.1. Motivation

Germany was the leading importer of edible nuts in the EU in 2006 accounting for 25% of total EU imports (CBI, 2007). Germany's share of imports of edible nut in the EU accounted for 16% of the total market share in the EU (CBI, 2007). Germany had no recorded production of macadamia nuts, which implies that South African macadamia nuts will not face competition from domestically produced nuts. A large variety of nuts are increasingly being used in the industrial sector and as an ingredient for a range of chocolate products in the German market, creating a large market and stimulating demand for macadamia nuts. Nuts are also a popular snack in Germany, especially during yearend holidays (CBI, 2007).

Germany is the biggest exporter in the world with exports worth €968 billion and a positive trade balance of €195 billion (Anon, 2008). Re-exports play an important role in boosting Germany's exports; this is evident in Germany's trade statistics of macadamia nuts. In 2007, Germany exported US\$2 362 000 worth of macadamia nuts, even though it has no production capacity (TradeMap, 2008). Lastly, as a target market for macadamia nuts from South Africa, Germany has great potential as shown by its large market size, high and positive growth rates, large share in the world market and a zero tariff rate for macadamias originating from South Africa (see Sections 5.7 and 5.8).

4.8. Understanding the target market

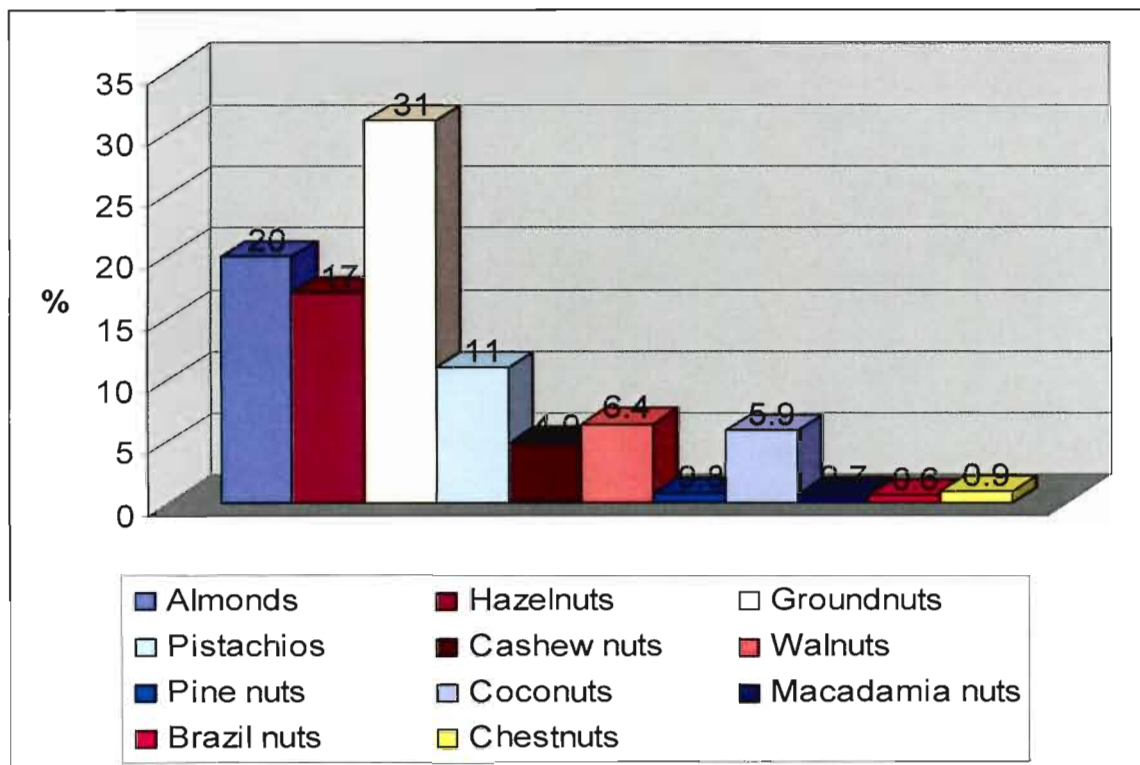
4.8.1. Consumption, production and key trends

Germany is Europe's largest economy and the second most populated country with a population of 82.3 million (CIA, 2008). It is the fifth largest economy globally in terms of Purchasing Power Parity (PPP) and had an annual economic growth rate of 2.6% in 2008 (CIA, 2008). GDP per capita in the German economy was estimated to be US\$34 100 in 2007 (CIA, 2008). The average German household's income and food expenditures are among the highest in the world (FAS, 2008). The average German consumer is known to be affluent and mainly depends on imported goods (Berry, 2006).

Consumption of edible nuts in Germany amounted to 319 000 tons and accounted for 16% of total EU consumption in 2006, making it the leading edible nut consumer (FAO,

2008). The consumption of edible nuts increased by 4% in Germany in 2008 (FAO, 2008). Most edible nuts are consumed as part of confectionary products. Figure 4.1 depicts the breakdown according to the type of edible nut's share in Germany's total imports in 2006. Groundnuts were the most consumed edible nut in Germany accounting for 31% of the volume of Germany's total edible nut consumption. Almonds are also widely consumed in Germany (20% of total volume), hence the popular German marzipan, which has an almond paste as its main component (CBI, 2007). Macadamia nut consumption was still relatively low and it constituted only 0.7% of the total German consumption of edible nuts.

Figure 4.1: Edible nut consumption volumes in Germany by category



Source: Adapted from CBI statistics, 2007

Edible nuts are consumed throughout the year with increases towards the end of the year and during Christmas. Consumers are price conscious, but a distinct market for high quality, speciality and gourmet products exists. This creates two markets that can be targeted when selling South African macadamia nuts in Germany. Macadamia nuts can be sold through discount food stores that flourish in the German market or through speciality shops. In addition to this, Germany is the largest market for organic produce in

the EU (Richter, 2005). This also creates an opportunity for South African macadamia nut growers to explore this premium market by venturing into organic production.

The German consumer is health conscious and takes into account the effects of food consumption on health. Consumers are exploring new flavours and products, such as nuts, which are increasingly becoming popular (CBI, 2008). An increase in the consumption of edible nuts, especially macadamia nuts, is attributed to the health benefits associated with consumption (see Section 5.2.1).

4.8.2. Market segments

There are 16 states in Germany with marked differences in their demographic composition, economies and culture. Of interest are the differences in the culinary habits and food preferences. The Southern states' diets are more traditional and consist of meat, potatoes and vegetables. In contrast, the Northern states are more diverse with a wider variety of food in their diet (CBI, 2008). Therefore, export of South African macadamia nuts should be targeted to the diverse Northern states in Germany.

4.8.3. Production

Walnuts are the only nuts that are produced on a commercial scale in Germany (FAO, 2008). Consumption and trade is mainly supplemented by imports, especially from developing countries. In 2006, developing countries contributed to 29% of Germany's imports of edible nuts (CBI, 2008). Imports of edible nuts mainly consist of mixtures of different nuts originating from Turkey. Germany is a transit destination and this is shown by its re-exports of edible nuts from developing countries to other EU countries (Trade Map, 2008).

4.8.4. Key trends

Luxury nuts have gained popularity in the EU market and in Germany in particular. This is mainly as a result of the consumers becoming more health conscious and the ability of nut packers to successfully market newly developed nut mixtures. Consumption of edible nuts is rising and is increasingly becoming an alternative source of protein due to the prevalence of diseases such as foot-and-mouth disease in cattle. Due to the change in

lifestyles, more German consumers spend less time preparing meals and this has led to the rise in consumption of healthy snacks that contain protein, for example, edible nuts. Organic production of edible nuts is rising in the EU, but is still not adequate to satisfy domestic demand, thereby creating export opportunities for developing countries to fulfil this demand.

4.9. Market characteristics

4.9.1. Minimum requirements

The United Nations Economic Commission for Europe's (UNECE) specialised section of standardisation of dry and dried produce, provides details about the basic requirements for in-shell macadamia nuts at the export control stage. The standards apply to the marketing and commercial quality of prepared and packed in-shell macadamia nuts intended for direct consumption.

In-shell macadamia nuts must meet the following basic requirements according to the UNECE Standards for macadamia nuts (CBI, 2008):

"The shell must be:

- Intact; however, superficial cracks or slight superficial damage are not considered a defect, provided the kernel is physically protected;
- Clean; practically free of any visible foreign matter, including residues of adhering hull affecting in aggregate more than 5% of the total shell surface;
- Free from blemishes, areas of discolouration or spread stains in pronounced contrast with the rest of the shell, affecting in aggregate more than 25% of the surface of the shell;
- Sound; free from defects likely to affect the natural keeping quality of the in shell macadamia nuts;
- Free from mould filaments visible to the naked eye; and
- Well formed; not noticeably misshapen.

The kernel must be:

- Free from rancidity;
- Sufficiently developed. Kernels with the following defects are to be removed:
 - i.) Shrunken or shrivelled kernels;

- ii.) extremely flat and wrinkled kernels;
 - iii.) desiccated;
 - iv.) dried out or tough kernels with portions affecting more than 25% of the kernel and;
 - v.) empty shells.
- Free from blemishes, areas of discolouration or spread stains in pronounced contrast with the rest of the kernel, affecting in aggregate more than 25% of the of the surface of the kernel.

The whole produce (shell and kernel) must be:

- Sound; produce affected by rotting or deterioration such as to make it unfit for consumption is excluded;
- Free from mould filaments visible to the naked eye;
- Free from living pests whatever their stage of development;
- Free from damage caused by pests, including the presence of dead insects and / or mites, their debris or excreta;
- Free of abnormal external moisture; and
- Free of foreign smell and / or taste.

Table 4.8: Size dimensions for grading macadamia nuts

Size designations	Diameter (mm)
Extra large	28 mm and larger
Large	23 – 28 mm
Medium	18 – 23 mm
Small	16 – 18 mm
Undersize	Less than 16 mm

Source: UNECE, 2007.

The condition of the in shell macadamia nuts must be such as to enable them

- To withstand transportation and handling; and
- To arrive in satisfactory condition at the place of destination.”

Furthermore, in-shell macadamia nuts should have a maximum moisture content of 3% and if graded according to size, it should be in accordance to the parameters illustrated in Table 4.8.

4.9.2. Standards and regulations

Standards and regulations ensure that production and manufacturing processes maximise on food safety. These can depend on the market in which the product is being sold. The most common standards and regulations in the macadamia nut industry include the Hazard Analysis and Critical Control Point (HACCP) accreditation. The HACCP system's management policies ensure that significant hazards to food safety are identified and controlled during production in the processing facilities. Macadamia nut farmers are encouraged to apply and have in place eco-friendly processes, such as to practice Good Agricultural Practices (GAP), Good Manufacturing Processes (GMP), Good Storage Practices (GSP) and Integrated Pest Management (IPM). These management systems also help to control for the levels of mycotoxin contamination, especially aflatoxins (F.A.O, 1999). Aflatoxins are toxic substances involved in metabolism. Aflatoxin contamination or poisoning over a long period has been shown to be associated with liver cancer and hepatitis B infection (Eaton & Gallagher, 1994; Dibisceglie, 1986). Another important standard that relates to the edible nuts industry is the ISO 9001: 2000.

An investigation into the domestic market (South Africa) through telephone interviews with experts in the industry revealed that conformance to standards may be dependent on the specific buyer of the final product. This implies that there is no specific set of standards that all products must conform to in all markets (Bekker, 2008). Furthermore, some large-scale buyers may require proof of conformance to the accreditation and the level of quality control. This can be satisfied by either providing a production flow chart to the client to show the production processes and safety measures, or may require a visit from the client to inspect the company's plant and machinery (Golden Macadamias, 2008). Exporters should check with their potential importers for the latest requirements regarding standards and regulation of macadamia nuts.

4.9.3. Packaging and labelling

Exporting to the EU market and to Germany in particular, requires adhering to rules and regulations on labelling. This is a prerequisite for the product's entry into the market. This

information is essential to the consumer and enables them to know about the contents and composition of the product (CBI, 2007).

Table 4.9: Labelling requirements for in shell macadamia nuts

Labelling requirements
Identification: Packer and / or Dispatcher: Name and physical address (e.g. street/city/region/postal code and, if different from the country of origin, the country) or a code mark officially recognized by the national authority
Nature of produce: - In-shell Macadamia nuts - Name of variety and /or commercial type (optional).
Origin of produce: Country of origin and, optionally, district where grown or national, regional or local place name.
Commercial specifications: - class - size (optional) - crop year (optional); mandatory according to the legislation of the importing country - net weight, or the number of consumer packages, followed by the net unit weight in the case of packages containing such units (optional or at the request of the importing country) "Best before" followed by the date (optional).
Official control mark (optional)

Source: UNECE, 2008

Exporters must adhere to the EU Directive 200/13/EC, which lays out rules for packaging, labelling and advertising of food stuffs. The main concern in this regard is that packaging; labelling and advertising of food stuffs may not mislead the consumer or make claims on health benefits of the product without any adequate scientific justification. Labels on food stuffs should be in the German language and should include the information listed in Table 4.9. As illustrated in Table 4.9, the labels should indicate the name of the packer or the dispatcher of the South African macadamia nuts. Traceability of products is very important in the German market, thus this information is vital. The label should also include the nature of the produce, the origin of the produce and the commercial specifications of the product (see Table 4.9).

In-shell macadamia nuts must be packed in a way that the content/produce is adequately protected with materials that are clean and of good quality. This will prevent damage to the content/produce, externally and / or internally. The use of paper or stamps bearing trade specifications is permitted, provided that the printing or labelling has been done with non-toxic ink or glue.

In the case of foodstuffs of which the durability is extended by means of packing gases, labels should include the words "packed in a protective atmosphere" according to the directive 89/107/EEC of the EU legislation (CBI, 2008).

4.9.4. Labelling of allergens

Allergens are substances that cause allergies. These should be appropriately labelled according to the labelling of allergens directive, Directive 2007/68/EC of the EU legalisation (CBI, 2008). Macadamia nuts are classified as an allergen, thus, the label should contain allergy information and have the words "Allergy information: contains macadamia nuts" in addition to the packaging and labelling specifications illustrated in Table 4.9.

4.9.5. Nutrition labelling

Foodstuffs delivered to the final consumer as well as food stuffs intended for supply to restaurants, hospitals, canteens and other mass caterers should have nutrition labels if claims on nutrition appear on a food label, in presentation or in advertising. Labels must indicate the specified ingredients and the units for expressing these nutrients (CBI, 2008).

4.9.6. Packaging materials

Raw macadamia nuts are packed in standard 550 mm by 610 mm pouches that are made of aluminium foil, Biaxially Oriented (BO) nylon and LLD polythene in order to maintain oxygen and water vapour transmission rates and reduce quality deterioration (SAMAC, 2008). The nuts are gas flushed using either nitrogen or carbon dioxide before being packed in vacuum-sealed pouches, and this helps to maintain the nuts' quality and texture for up to 18 months (Golden Macadamias, 2008). Once vacuum sealed, pouches are then inserted into cartons with net weight of the cartons is 11.34 kg (25 lbs) (Golden

Macadamias, 2008). The carton material should be recyclable and should conform to the EU Environmental regulations regarding packaging and packaging waste; EU Directive 94/62 (Green farms nut company, 2008).

4.9.7. Distribution channels

The main market segments for macadamia nuts are food processing, retail and catering markets. An enquiry into the domestic market (South African market) revealed that processors of macadamia nuts sell unprocessed macadamia nuts to confectionary producers. Confectionary producers use the nuts as an ingredient such as Sally William's nougat company. An alternative is to sell to a trader who will add value to the product by roasting, salting and packaging it into smaller retail units. In most cases, processors and exporters do not add value to the product. The end product is shelled raw macadamia nuts that are sold in both the domestic market and in foreign markets.

Entry into foreign markets and into the German market specifically, may be impeded by a lack of information, financial risks and legal constraints. As a result, the distribution channel for food and beverages in Germany is mainly characterised by retailers importing from a central buyer or an importer. Importers act as intermediaries between suppliers abroad and customers in Germany (BGA, 2008). Retailers seldom import directly from suppliers, especially those that are not in the EU. Central buyers or traders or importers handle large orders that consist of a variety of products in large volumes and are responsible for distribution to the various retailers. Retailers import directly only if the products possess special qualities, price or promotional support (FAS, 2008).

Imports from non-EU countries and developing countries are handled by a specialised importer. Specialised importers deal with specific products or product groups and they are responsible for the distribution and marketing of the product nationwide through sales teams or independent distribution networks (FAS, 2005). A specialised importer has in-depth knowledge about the market and the entry requirements into that market (CBI, 2005). Importers can provide relevant information and services, such as:

- The importing requirements and procedures in the German market;
- Sourcing requirements in the market;
- Different retailers and unusual market characteristics;
- Arrange shipping and customs clearance;

- Ensure compliance with German food law, labelling and packaging requirements;
- Distribute products nationwide while ensuring that the products have shelf space; and
- Pack bulk shipments especially of agricultural products for retail sale.

Importers have strong relationships with buyers (see Section 2.6) and this assists in ensuring that the products will be distributed (FAS, 2005). Prices of agricultural products fluctuate and hence another important role that the importer plays is to take the risk from retailers and producers through credit facilities and other forms of financial arrangements (CBI, 2005). Lastly, some importers re-export the product to other countries. It is highly recommended that a South African exporter of macadamia nuts deals with a specialised German importer, especially when selling consumer ready macadamia nuts (see Appendix 4). A specialised importer will not only distribute the product, but will also act as quality controller and a logistics service provider (CBI, 2005).

4.9.8. Prices

Based on marketing statistics provided by the Southern African Macadamias Growers Association (SAMAC), export prices of macadamia nuts in 2007 were marginally lower than those of 2005. Styles 0, 1 and 2¹⁹, which are whole kernels (see Table 4.10), fetch the highest price (R61.10; R58.64 and R53.13 per kilogram (kg) respectively in 2007) compared to all the styles of macadamia nuts. Prices of kernel halves, Styles 3 and 4 were on average R40 per kg in 2007 (see Table 4.10).

According to traders in the domestic market, wholesale or bulk prices of Style 2 macadamia nuts range from R58 per kg on average, while a kilogram of Style 4 macadamia nuts was R37 per kg. Domestic prices are estimated based on export prices excluding transport costs. On average, transport costs in 2008 were R2.50 per kg. In the domestic market the main buyers of macadamia nuts are Woolworth's, Shoprite and Checkers supermarkets. In the domestic market it was found that supermarkets sell macadamia nuts in 100 gram bags with a price range of between R13 and R21.95 per 100 grams. It was concluded that retailers generally charge 15% for merchandising and add between 25 and 35% mark up on the wholesale price of macadamia nuts.

¹⁹ The nuts are graded according to size (styles) which ranges from whole kernels to chips (Green Farms Nut Company, 2008).

Table 4.10: Macadamia nut prices in 2007

Style		Total sales volume (kg) in 2007	Price range R/kg 2007	Price range (2005)
0	Min 95% whole kernel >21 mm	118 214	R 61.10	R84.44
1	Min 95% whole kernel >16 mm	972 420	R 58.64	R79.42
2	Min 50% whole kernel >12 mm	456 244	R 53.16	R75.28
3	Min 15% whole kernel plus halves >12 mm	517 579	R 40.08	R71.58
4	Min 80% half kernel >9 mm, remainder pieces >9 mm	1 161 061	R 40.32	R71.27
5	Large chips 9 mm – 12 mm	820 248	R 36.28	R68.19
6	Small chips 6 mm – 9 mm	197 119	R 37.56	R64.51
7	Fines < 6 mm	29 664	R 38.00	R61.59

Source: Bekker, 2008

4.9.9. Doing business in Germany

According to the World Bank's doing business project, on average it takes three days to prepare documents and costs US\$182 for import procedures for any standard shipment into Germany. Customs clearance and technical control on average cost US\$55 and can take up to a day. Inland transportation and handling cost US\$425; while ports and terminal handling cost US\$225 (see Table 4.11). In total, the cost of exporting to Germany for a South African exporter is US\$887 and import procedures take up to seven days per shipment compared to the OECD countries' averages of US\$1132.70 and 11.4 days, respectively, per shipment.

Table 4.11: The costs and business regulations of trading in Germany

Nature of export procedures	Duration (days)	US\$ Cost
Documents preparation	3	142
Customs clearance and technical control	1	30
Ports and terminal handling	2	225
Inland transportation and handling	1	425
Totals:	7	822
Nature of import procedures	Duration (days)	US\$ Cost
Documents preparation	3	182
Customs clearance and technical control	1	55
Ports and terminal handling	1	225
Inland transportation and handling	2	425
Totals:	7	887
Export documents	Import documents	
Bill of lading	Bill of lading	
Commercial invoice	Certificate of origin	
Customs import declaration	Commercial invoice	
Packing list	Customs import declaration	
	Packing list	

Source: World Bank, 2008

4.9.10. Marketing and trade promotion

Exporters of macadamia nuts in South Africa promote their products through various ways, which differ according to each exporter. These include sales promotion missions in the foreign markets whereby the exporters visit the importing countries to strengthen existing business ties and to seek potential clients and market their products (Doyen, 2004). Trade is also promoted through word-of-mouth between existing clients and potential clients. If the exporter has a good reputation in the market, prospective clients can be convinced by the existing satisfied clients to do business with the exporter.

Trade fairs are reputed to be an effective means of trade promotion (Doyen, 2004). Trade fair can be sponsored by the dti or by the company itself. Trade fairs provide a good platform and exposure for exporters to new markets and buyers. Appendix 3 highlights trade fairs and events that exporters can attend in 2009 and a list of possible importers. Appendix 4 and 5 also provide lists of selected potential importers and details of the import promotion office in the German market.

4.10. Summary

Many opportunities exist for South African exporters in the German market. Scientific research has proven that some health benefits are attributed to the consumption of macadamia nuts. The German consumer, in particular, is health conscious and is becoming increasingly aware of health foods. As a result, the demand for healthy snacks is rising in Germany, which is the largest consumer of edible nuts in the EU. Opportunities exist to differentiate the product as there are different market segments in the German market. The markets can be segmented geographically, Northern and Southern Germany, and the more diverse Northern districts, whose diet is more diverse, should be targeted. The market can also be segmented based on consumer preferences. The German consumer is known to be price conscious and also to be keen on quality. The product can be targeted in two different markets, namely discount food stores, where the product can be sold at low prices, or in premium product specialty shops where the product will be sold at a high price.

Germany is the largest market for organic produce in the EU. Organic production in Germany is on the rise, but is not sufficient to fulfil the rising demand for organic produce. South Africa can explore the organic market for macadamia nuts, taking into account the costs and the benefits of this venture. Organic macadamia nuts fetch prices that are relatively higher than non-organic macadamia nuts.

Exports of macadamia nuts from South Africa mainly consist of bulk, shelled and unprocessed macadamia nuts. There is great potential for value addition in the domestic market by roasting, salting and packaging the macadamia into smaller quantities that can be sold in the retail sector. Effort should be made to enhance value addition according to consumer preferences. Trade promotion is mainly done through attending trade fairs and through sales missions in foreign markets. The following chapter will give a summary of the study, discuss the main findings and give recommendations for future research.

CHAPTER 5

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

CHAPTER 5: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

The primary objective of this chapter is to provide a summary of the entire study, to derive conclusions and recommendations based on the findings of the empirical study and to highlight areas for future research.

5.2. Summary

Chapter one was the introductory chapter and it outlined the background, problem statement, research objectives, research method and outline of this study. The objective of this study was to assess the export potential of South African edible nuts classified under SITC 0577 to determine the nut product with the highest export potential. In addition to this, this study aimed to assess potential target markets to determine the potentially most profitable target market for the edible nut with the highest export potential for the South African economy.

Chapter 2 discussed the macro- and microeconomic determinants of exporting. The determinants of exports were discussed to provide a better understanding of various export stimuli, both on a firm level and on a national level. These stimuli can be explained by means of neoclassical trade theories such as the Heckscher-Ohlin theory, as well as modern trade theories that focus on relaxing the assumptions on the neoclassical theories to incorporate elements such as imperfect competition and economies of scale, among others. Other forms of export stimuli include exchange rate variations, commercial and trade policies, unsolicited orders and sunk costs. Following this, a few of the benefits of exporting were focused on, namely economic growth, increased sales volumes and market share, as well as technological advancements. Chapter 2 presented the theoretical framework for the research method used in this study by analysing the different approaches that a firm can employ in the international market selection decision. At this stage in the firm's internationalisation process through direct exporting, the selection of a potential target market can be guided by any of the following traditional approaches, namely the degree of market similarity, critical market characteristics, decision support models, market profiles and cognitive maps, among other theorems and methods. Lastly, in Chapter 2 the discussion was focused on the modes of entry into the

internationalisation process and how relationships can be established with potential trade partners.

Chapter 3 discussed the research method employed to assess the export potential of the fifteen edible nut product categories classified under SITC 0577. The export potential of these products was assessed by building a composite export potential index. The edible nuts that fall under the SITC 0577 are Brazil nuts, coconuts, cashew nuts, almonds, hazel nuts, walnuts, chestnuts, pistachios and macadamia nuts. The composite export potential index comprised three sub-indices, namely South Africa's current export performance index, the world markets index and the production index.

Additionally, the findings of the export potential assessment of edible nuts classified under SITC 0577 were discussed and the following conclusive findings were made:

- High growth was experienced in South Africa's exports in value between 2002 and 2006 of 99% and 64% in cashew nuts in shell (HS 080231) and cashew nuts without shell (HS 080232), respectively.
- The world markets index showed that shelled almonds (HS 080212) experienced a relatively high growth in value of world imports. In addition to this, the world demand in quantity for shelled cashew nuts (HS 080232) and cashew nuts in shell (HS 080231) was also growing at a high rate, earning the products the second and third rank in the world markets index respectively, after shelled almonds.
- Lastly, the production index highlighted in which products South Africa had an existing production capacity. According to this sub-index, edible nuts (nes) (HS 080290) were the only nut product that South Africa had an existing production relative to world production and contributed to 1.67% of world production. It is important to note that macadamia nuts were classified under HS 080290 prior to the 2007 revision of the HS system and as a result this production data was not a true reflection of South Africa's production of macadamia nuts relative to other producers in the world.
- In an attempt to solve the first part of problem statement, it was found that nuts edible (nes) (HS 080290) was the product with the highest export potential for the South African economy out of the fifteen HS product categories corresponding to SITC 0577, achieving both the highest current export performance and existing production capacity index scores.

Chapter four investigated various potential target markets for nuts edible (nes) (HS 080290), with particular focus on macadamia nuts. In this chapter a market profile was compiled to provide a better understanding of the potential target market of South African macadamia nuts. This chapter had the following conclusions:

- Macadamia nuts belong to the *Proteaceae* species of which only two varieties, the *macadamia integrifolia* and the *macadamia tetraphylla*, are edible.
- South Africa is one of the major producers of macadamia nuts in the world, being the fourth largest macadamia nut producer in the world in 2008. Production of macadamia nuts in South Africa is mainly concentrated in Limpopo, Mpumalanga and KwaZulu Natal.
- Optimal climatic conditions for the production of macadamia nuts were found to be in frost-free tropical and sub-tropical climatic regions.
- An analysis of the world exports of macadamia nuts (HS 080160) showed that Australia was the largest exporter of macadamia nuts, accounting for 46% of the quantity of world exports of macadamia nuts, while South Africa accounted for 20% of the volume of world exports of macadamia nuts.
- The USA was the largest importer of macadamia nuts; accounting for a quarter of world imports in value and Germany was the second largest importer. The top three main importers of macadamia nuts account for 50% of the value of world imports of macadamia nuts, indicating that the market was highly concentrated.
- Annual production of macadamia nuts for the period 2007/2008 increased substantially (by 13%) for South Africa. During the same period, production in Australia decreased by 16%, forcing prices to rise in response to strong demand in the USA and in Europe.
- The largest existing importers of South African nuts not else specified (nes) HS 090290, were the US and Netherlands, whose imports accounted for 53.8% of South Africa's exports.
- Other major destinations of South African nuts (nes) (HS 080290) were Spain, Japan Germany, the United Kingdom, Hong Kong, Vietnam, Italy and France. The top ten importers account for almost 90% of South Africa's exports.
- Emerging economies such as Vietnam, Egypt, Kenya and Pakistan were identified as potential target markets due to their high growth in imports since 2003. Egypt experienced an annual growth in value between 2006 and 2007 of 412%, while Kenya experienced an explosive rate of annual growth in value of 1806% in the

same period. The developed markets, such as Germany and Italy, experienced constant high growth rates of their imports in value and in quantity since 2003.

- South African macadamia nuts had preferential market access in the six potential European markets, namely Estonia, Germany, Italy, Slovakia, Spain and the United Kingdom. Preferential market access in these markets enabled South African macadamia nuts to face no tariffs on entry into these markets. South African macadamias also faced a 0% tariff in Hong Kong.
- In Germany, South Africa and the Netherlands faced the same tariff (0%), while Australia faced a tariff of 2% relative to South Africa's 0% tariff.
- South Africa had a tariff advantage and faced a 0% preferential tariff rate in Italy, Slovakia and Spain compared to its main competitor Australia, which faced a 2% tariff in these markets.
- However, Iran had a tariff advantage over South Africa in Kazakhstan, facing a tariff of 3.5% compared to South Africa's 5%. Other main competitors for South Africa, who had a tariff advantage, were Malawi and Tanzania in the Kenyan market, who faced no tariffs, while South Africa faced a tariff of 25%.
- Germany was chosen as a target market for South African macadamia nuts based on the following:
- Germany was the leading importer of edible nuts in the European Union in 2006, accounting for 25% of total EU imports.
- Germany's share of imports of edible nut in the EU accounted for 16% of the total market share in the EU.
- Germany had no recorded production of macadamia nuts, which implies that South African macadamia nuts would not face competition from domestically produced nuts. Furthermore, with Germany being a port of re-export or possibly a processing hub, the market had great potential import demand for South African macadamia nuts.
- A large variety of nuts are increasingly being used in the industrial sector and as an ingredient for a range of chocolate products in the German market, creating a large market and stimulating demand for macadamia nuts. Nuts are also a popular snack in Germany, especially during yearend holidays.
- Germany is the biggest exporter in the world with exports worth €968 billion, with re-exports playing an important role in the German economy.
- In 2007, Germany exported US\$2 362 000 worth of macadamia nuts, although it has no production capacity.

- Lastly, as a target market for macadamia nuts from South Africa, Germany has great potential as shown by its large market size, high and positive growth rates, large share in the world market and transparent markets.

The market profile for South African macadamia nuts revealed the following about the German market:

- Germany is Europe's largest economy and second most populated country with 82, 3 million people. It is the fifth largest economy globally in terms of Purchasing Power Parity (PPP) and had an annual economic growth rate of 2.6% in 2008.
- Consumption of edible nuts in Germany amounted to 319 000 tons and accounted for 16% of total EU consumption in 2006, making it the leading edible nut consumer.
- The German consumer is health conscious and takes into account the effects of food consumption on health and as a result luxury nuts have gained popularity in the EU market and Germany in particular.
- South African macadamia nut exporters should have the Hazard Analysis and Critical Control Point (HACCP) and ISO 9001: 2000 accreditation, to apply and have in place eco-friendly processes such as to practice Good Agricultural Practices (GAP), Good Manufacturing Processes (GMP), Good Storage Practices (GSP) and Integrated Pest Management (IPM).
- Exporters must adhere to the EU Directive 200/13/EC, which lays out rules for packaging, labelling and advertising of food stuffs.
- Macadamia nuts are classified as an allergen and should be labelled according to the labelling of allergens directive, Directive 2007/68/EC of the EU legalisation (CBI, 2008).
- According to traders in the South African market, wholesale or bulk prices of Style 2 macadamia nuts range from R58 per kg on average, while a kilogram of Style 4 Macadamia nuts was R37.
- Domestic prices are estimated based on export prices excluding transport costs. On average transport costs in 2008 were R2, 50 per kg
- The cost of exporting to Germany for a South African exporter is US\$887 compared to the OECD countries' average of US\$1 132, 70 and import procedures take up to seven days compared to the OECD average of 11, 4 days per shipment.

Therefore, in an attempt to solve the second part of the problem statement, Germany was chosen as the target market for South African macadamia nuts and a market profile was compiled to reveal great potential for export success for South African macadamia nut exporters.

5.3. Recommendations

The export success of macadamia nuts from South Africa lies in adhering to production, processing, and packaging standards and regulations in Germany. Value addition and organic farming are lucrative prospects that the South African exporter can successfully explore. There are many opportunities for the South African exporter in the German market and this can be achieved through trade promotion, value addition and market research to reveal the preferences of the German consumer.

Based on the findings of the empirical study, it was noted that exports of macadamia nuts originating from South Africa mainly comprise of bulk, shelled and unprocessed macadamia nuts. There is great potential for value addition in the domestic market by roasting, salting and packaging the macadamia into smaller quantities that can be sold in the retail sector. Effort should be made to enhance value addition according to consumer preferences.

Germany is the largest market for organic produce in the EU. Organic production in Germany is on the rise, but is not sufficient to fulfil the rising demand for organic produce. South Africa can explore the organic market for macadamia nuts by taking into account the costs and the benefits of this venture. Organic macadamia nuts fetch prices that are relatively higher than non-organic macadamia nuts.

South Africa is the third largest producer of macadamia nuts in the world. This was a 10.45 % increase compared to the previous season and forecasts predict that production output will reach 44 000 tons in 2010. This will mainly be attributed to the new orchards that will reach commercial maturity by 2010. This highlights great potential for export in the future for the South African economy, as there is capacity to expand the existing market share.

Trade promotion is mainly done through attending trade fairs and through sales missions in foreign markets. More effort and resources should be employed to promote the consumption of macadamia nuts both in the domestic and international market. The dti, as the trade promotion organisation in South Africa, can assist exporters with up-to-date information on trends, standards and regulation in the German market. Furthermore, exporters need support to enter foreign markets and this can be done by increasing their opportunities to attend trade fairs in the German market. Appendix 3 shows a list of possible buyers for South African macadamia nuts, and a list of trade fairs in Germany in 2009 that are of interest to exporters of macadamia nuts. The dti can assist exporters by working in partnership with respective import promotion agencies, such as the import promotion office in the German market (see Appendix 1).

5.4. Areas of future research

Exports play a pivotal role in enhancing a country's economic growth and a firm's profitability and expansion. However, further research is required to maximise the export success of South African exporters of macadamia nuts (HS 080260).

This study was restricted by data availability for the product macadamia nuts HS 080260. As a result, the analysis in this study was conducted on HS 080290-nuts edible fresh or dried, whether or not shelled or peeled not else specified (nes), because prior to the 2007 revision of the HS classifications, macadamia nuts did not have a sub-heading under the HS system and were classified under this heading. The 2007 revision of the HS system included the sub-heading 080260 macadamia nuts under the four-digit heading HS 0802, and resulted in the availability of data for macadamia nuts only from 2007. Therefore, it would be interesting to assess the export potential of the products corresponding to SITC 0577 after two years, when it will be possible to include data for macadamia nuts and also evaluate the potential target, since the analysis for this study was done using data for HS 080290. In two years, it will be possible to calculate the export and import growth rates, production statistics and tariffs of macadamia nuts.

Since this study is based on the outcomes of the DSM for South Africa on the SITC 4-digit level, other areas that may be pursued for further research could be the examining of the outcomes of a DSM based on an HS 6-digit level data, in order to see whether macadamia nuts are identified as a product with high export potential. In addition to this,

the number of realistic export opportunities identified by the DSM should be calculated and converted to assign a dollar value for the size of the import markets. This refinement of the DSM will enable the selection of a target market to be based on the dollar value of the realistic export opportunities and be a much more accurate basis.

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APPENDICES

Appendix 1: List of importing markets for South Africa's exports of product HS 080290

Importers	Exported value 2007, US\$ 000	Share in South Africa's exports, %	Exported quantity 2007	Unit value, (US\$/unit)	Exported growth in value 2003-2007, %, p.a.	Exported growth in quantity 2003-2007, %, p.a.	Exported growth in value 2006-2007, %, p.a.
World	41323	100	36603	1129	10	70	-1
USA	11433	27.7	3696	3093	0	36	10
Netherlands	10802	26.1	10276	1051	27	78	2
Spain	3524	8.5	9191	383	12	110	-11
Japan	2793	6.8	3858	724	12	75	-31
Germany	2125	5.1	4009	530	-9	60	76
UK	1617	3.9	336	4813	20	2	-50
Hong Kong	1417	3.4	858	1652	4	49	7
Vietnam	1321	3.2	881	1499			318
Italy	1162	2.8	295	3939	28	44	-19
France	879	2.1	565	1556	214	264	344
Area Nes	692	1.7	154	4494	197		
Canada	652	1.6	154	4234	-12	7	-79
Belgium	468	1.1	66	7091	-49		
Mozambique	437	1.1	1687	259	50	73	-4
China	314	0.8	75	4187			726
Gambia	211	0.5	40	5275			
Taiwan	207	0.5	28	7393		57	8
Switzerland	176	0.4	23	7652	56	65	9
Israel	171	0.4	20	8550	-13	-13	-37
Mexico	159	0.4	18	8833			
Luxembourg	127	0.3	16	7938			
Tanzania	127	0.3	17	7471	182		6250
Singapore	100	0.2	15	6667			3233
Malaysia	84	0.2	49	1714			171
Norway	75	0.2	57	1316	102		
Slovenia	54	0.1	6	9000	74		38

Source: ITC – TradeMap, 2008

Appendix 2: List of importing countries for product HS 080290

Importers	Value imported in 2007 in US\$ 000	Trade balance in 2007 in US\$ 000	Quantity imported in 2007	Unit value (USD/unit)	Annual growth in value 2003-2007, %	Annual growth in quantity 2003-2007, %	Annual growth in value 2006-2007, %
World	1177007	-261330	470340	2502	15	7	15
USA	255533	-53690	49760	5135	7	1	-10
Italy	85766	-71519	13010	6592	25	25	45
Germany	77258	-24698	6892	11210	33	23	25
Hong Kong	74311	-34780	21108	3521	32	24	190
UK	65067	-57816	43311	1502	20	74	8
Pakistan	54308	-52984	68457	793	79	64	44
Spain	53508	-9716	26241	2039	20	3	44
Netherlands	50919	-19010	5737	8876	17	9	-13
China	49773	51710	30348	1640	12	-4	-12
Canada	48989	-47161	5824	8412	6	-6	-7
Vietnam	42910	-37801	15041	2853	175	83	164
France	35093	-30968	4164	8428	13	1	16
Luxembourg	25216	-20903	2718	9277	12	11	104
Japan	23935	-23923	2992	8000	-8	-9	-35
Belgium	19355	-5080	1957	9890	2	-2	35
Bangladesh	18192	-13662	34042	534	26	-15	252
Nepal	16176	-16176	28491	568	45	32	273
India	13100	-9857	34413	381	18	11	-49
Singapore	11069	-287	12732	869	26	46	39
Slovakia	2226	-1431	716	3109	143	146	36
Denmark	8479	-7430	740	11458	9	-9	-3
Kenya	972	8843	3236	300	76	151	1806
Estonia	703	-401	168	4185	139	175	80
Egypt	302	-273	45	6711	170	92	412
Kazakhstan	353	-338	349	1011	71	189	122
Mexico	6658	-5719	745	8937	18	7	32

Source: ITC – TradeMap, 2008

Appendix 3: Trade fairs and future events

- **Anuga**

Biennial trade fair. Next event: 10.10-14.10.2009

Organizer: Koelnmesse GmbH

Messeplatz 1

50679 Köln

Germany

Tel: +49 221 821-3895

Fax: +49 221 821-3410

Email: anuga@koelnmesse.de

www.koelnmesse.de

- **Food Ingredients – Europe (FIE)**

Biennial trade fair, which takes place in various locations.

Next event: Messe, Frankfurt Germany-17.11.2009-19.11.2009

Contact office: Expo-consult BV trading as CMP Information

PO Box 200

3600 AE Maarssen

The Netherlands

Tel: +31 346 559 444

Fax: +31 346 573 811

Email: fi@cmpinformation.com

www.fi-events.com

- **Natural Ingredients 2009**

Next event: Frankfurt, Germany-17.11.2008 -19.11.2009

Contact office: UBM International Media:

Tel: +31 346 559 444

Email: ni@cmpi.biz

- **ISM Cologne**

Next event: Cologne, Germany; 01.02.-04.02.2009

Koelnmesse GmbH

Messeplatz 1

50679 Köln

Deutschland

Tel: +49 221 821-2466

Fax: +49 221 821-3340

Email: i.weber@koelnmesse.de

Appendix 4: Selected potential importers and important contacts in the German market (see Section 2.6).

- Federation of the economy with agricultural trade (BVA)
Claus Bacmeister, Hamburg
Beueler Bahnhofplatz 18, 53225 Bonn
Postfach 301655, 53196 Bonn
Tel: 0228/975850
Fax: 0228/97585-30 /-32
Email: zentrale@bv-agrar.de
- Foreign Trade association of the German retail trade e.V.
Jürgen J. Maas, Düsseldorf
Mauritiussteinweg 1, 50676 Köln
Tel: 0221-9218340
Fax: 0221-9218346
Email: info@ave-koeln.de
Internet: www.ave-koeln.de
- Federation of the German Export Trade – An International Traders Association
Wolfhart Putzier, Hamburg
Am Weidendamm 1A, 10117 Berlin
Tel: 030/72625790
Fax: 030/72625799
Email: contact@bdex.de
- Association of the German wholesale for food and other kinds of distribution of short- and medium-term products (VDN)
Claus-Jürgen Kaiser, Pfäffikon/Schweiz
Siegessstraße 23, 53332 Bornheim
Tel: 0222/ 64 99 42
Fax: 0222/ 64 99 50

- Association of the Foreign Trade and Wholesale Trade in canned and deep frozen goods, dried fruits, edible nuts, dehydrated vegetables, spices, honey and similar products

Dieter Scheuer, Hamburg

Große Bäckerstr. 4, 20095 Hamburg

Tel: 040/374719

Fax: 040/37471919

Email: info@waren-verein.de

Internet <http://www.waren-verein.de>

- Fritz Wudy Obstgroßhandel

Industriesstraße 19

89423 Gundelfingen

Tel: +49 90 73 70 11

Fax: +49 90 73 37 52

- Bösch & Co. GmbH

Lippeltstraße 1

20097 Hamburg

Tel: +49 40 3 33 01 60

Fax: +49 40 33 30 16 66

<http://www.boesch.de>

Appendix 5: Import promotion offices

- The import promotion office: Germany
Deutsche Gesellschaft für Technische
Zusammenarb. (GTZ) GmbH
Dag-Hammarskjöld-Weg 1-5
65760 ESCHBORN
Tel: +49 6 196 791 229
Fax: +49 6 196 796 150
www.gtz.de/english