

**INTERNATIONAL COMPARISON OF AGRICULTURAL EXPORTS:
SOUTH AFRICA AND THE CAIRNS GROUP**

by

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DECLARATION

I, the undersigned, hereby declare that the work contained in this thesis is my own original work and that I have not previously in its entirety or in part submitted it at any university for a degree.

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SUMMARY

The study addresses two important research questions which are in essence motivated by the trade policy reform that took effect in the 1990s to reverse decades of inward industrialisation strategies towards outward industrialisation strategies to promote economic growth and development. This raised the expectation that a movement away from low-demand growth products towards commodities with stronger demand growth and buoyant price trends would be encouraged.

The first central question that this study addresses is the extent to which South African agricultural exports are moving up the value chain relative to the agricultural exports of the other members of the Cairns Group. The second research question that the study addresses is to determine whether South Africa's movement up the value chain (value adding activities) in agricultural exports is more competitive than the other members of the Cairns Group. To adequately address the first research question data from the Food and Agricultural Organisation (FAO), Trade and Industrial Policy Strategies (TIPS) and World Trade Organisation (WTO) databases were used to examine their trade perspectives. The second research question was addressed by applying Relative Comparative Advantage (RTA) using data from the FAOSTAT 2002 to determine each country's competitive status in selected agro-food chains.

The results show that South Africa managed to surpass all other members of the Cairns Group, except Chile, Philippines and Bolivia, whose export structures are highly dominated by high-value products relative to South Africa in terms of the movement up the value chain in agricultural exports. This is the case despite the fact that countries such as Argentina, Australia, Brazil, Colombia, Costa Rica, Indonesia, New Zealand, Thailand and Uruguay have managed to increase their percentage export value of high-value agricultural products and that South Africa has experienced a decrease in the percentage export value of high-value products. The results also clearly show that the food chains in Costa Rica, Paraguay, Thailand and South Africa are generally marginally competitive, whilst the food chains in Canada, Chile, Colombia, Indonesia and Uruguay are only just marginally competitive as many of their RTA values are situated around zero. The food chains in Guatemala, Malaysia, New Zealand and Philippines are internationally uncompetitive. And the food chains in Argentina,

Australia and Brazil are internationally competitive. The analysis also reveals that competitiveness decreases in all these countries when moving from primary to processed products in the agro-food chains which implies that value-adding opportunities are constrained.

OPSOMMING

Hierdie studie spreek twee belangrike navorsingvraagstukke aan wat in wese gemotiveer is deur die handelsbeleidshervormingsproses wat in die 1990s 'n aanvang geneem het. Dekades van intern-gerigte industrialisasie-strategieë is na ekstern-gerigte industrialisasie-strategieë omgeskakel om sodoende groei en ontwikkeling aan te moedig. Hierdie proses het die verwagting geskep dat 'n beweging weg van produkte met lae groei in vraag, na goedere met 'n sterker groei in vraag en veerkragtige prystendense sal aanmoedig.

Die eerste sentrale probleem waarop in hierdie studie gefokus word is die mate waartoe Suid-Afrikaanse landbou-uitvoere in die waarde-ketting op beweeg het relatief tot die landbou-uitvoere van die ander lede van die Cairns Groep. Die tweede vraag wat die navorsing aanspreek is an vas te stel of Suid Afrika se waardeletting oktiwiteit in landbou uitvoere meer kompetend is as die van onder lede van die Cairns Groep. Om die eerste navorsingsprobleem voldoende aan te spreek, is data van die Voedsel en Landbou Organisasie, Handel en Industriële Beleidstrategieë en die Wêreldhandelsorganisasie gebruik. Hierdie organisasies se databasisse is gebruik om handelsperspektiewe te bepaal. Die tweede navorsingsprobleem is aangespreek deur die toepassing van die Relatiewe Vergelykende Voordeel (RVV) op die data bekom van die FAOSTAT 2002. Hierdeur is elke land se mededingende status in sekere geselekteerde agri-voedselkettings bepaal.

Die resultate wys dat Suid Afrika daarin geslaag het om die ander lede van die Cairns Groep verby te steek, met die uitsondering van Chili, die Filippyne en Bolivië, waar uitvoerstrukture gedomineer word deur hoë waarde produkte relatief tot Suid Afrika. Hierdie tendens is ten spyte daarvan dat lande soos Argentinië, Australië, Brasilië, Colombië, Costa Rica, Indonesië, New Zealand, Thailand en Uruguay daarin geslaag het om hul persentasie uitvoerwaarde van hoë waarde landbouprodukte op te stoot, en dat Suid Afrika, daarenteen, ervaar het dat die uitvoere van hierdie produkte afgeneem het. Die resultate toon duidelik dat die voedselkettings in Costa Rica, Paraguay, Thailand en Suid-Afrika oor die algemeen marginaal kompetend is, terwyl die voedselkettings in Kanada, Chile, Colombië, Indonesië en Uruguay tot 'n mindere mate marginaal kompetend is aangesien hul RVV-waardes rondom nul lê. Die voedselkettings in Guatemala, Maleisië, Nieu-Seeland en die Filippyne is internasionaal nie-kompetend, met die voedselkettings in Argentinië, Australië en Brasilië wel internasionaal kompetend.

Die analise wys ook dat die mededingendheid afneem in al hierdie lande wanneer hulle van primêre na geprosesseerde produkte beweeg in agri-voedselkettings, dit impliseer dat waarde toevoeging geleenthede tot produkte beperk is.

DEDICATION

To my family

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CHAPTER ONE

1 Introduction

“It had always been the policy of developed countries that the developing world should move away from low demand growth products to finished products, but that this development policy for structural transformation of developing countries is in major contradiction to their current agricultural policies’ strategic direction”.

Du Toit quoted in Action Network (2000).

1.1 Background

The last decade has witnessed a tremendous change in agriculture policy and practice in South Africa. Reforms in the agricultural marketing sphere centred on shifting from systems of government intervention through Control Boards to a market virtually free from any state intervention. These reforms were largely the result of the recommendations of the Kassier Committee (1992) which were based on the premise that a stronger, more centralised and more representative authority was required to override the vested interests in the regulated marketing system, as it existed at the time (Van Zyl *et al.*, 2001). Steps were taken to transform the 22 agricultural Control Boards and six of them were abolished in 1993-1994 with the remainder going in 1998 (Kusi, 2002).

The new Marketing of Agricultural Products Act, No. 47 of 1996 stands out as the most sweeping and drastic development in agricultural policy in the 1990s (Vink *et al.*, 2002). The new Act replaced the Marketing Act of 1937 that was subsequently consolidated into the Marketing Act of 1968. The new Act spelled out a set of rules that differ greatly from the earlier legislation.

This, according to Groenewald (2000) represented a radical departure from the marketing regime to which farmers had become accustomed before 1996. Van Zyl *et al.* (2001) and Vink *et al.* (2002) point out that, while far reaching, the deregulation that had taken place before

1996 was piecemeal, uncoordinated and accomplished within the framework of the old Marketing Act with the result that any policy changes could easily be reversed. The new Act changed the way in which agricultural marketing policy would be managed in South Africa, not least by opening the sector to world market influences in a manner that could hardly have been anticipated a decade earlier.

On the trade policy front reforms also took effect in the 1990s. Prior to the 1990s South Africa's trade regime was out of line with both the changed external economic circumstances and the new domestic consensus on the appropriate role of trade in growth and development. During that period the country's trade regime was characterised by excessive protection and built around high tariffs, formula duties, import surcharges and direct controls (Kusi, 2002). The system of tariff protection was put in place during the 1960s, but direct import controls remained the main protective mechanism in agriculture through to the mid-1980s.

The impetus for trade liberalisation gained momentum in the early 1990s, when the country adopted a two-pronged approach to trade reforms. These included multilateral trade liberalisation in the context of the Uruguay Round of trade negotiations and unilateral trade liberalisation (Kusi, 2002). In the context of the Uruguay Round South Africa generally offered a five-year phased-in tariff reduction with effect from January 1995, except in the case of three sectors (textiles, clothing and motor vehicles) where reductions were phased in over a longer period.

In 1994 South Africa also announced a schedule of unilateral tariff liberalisation expiring in 1999 that went beyond the Uruguay Round commitments. In June 1994 the government began dismantling the system of import surcharges by removing the five-percent surcharge on intermediate and capital goods. This was followed in September 1995 with the removal of the 15 percent surcharge on motor vehicles. In October 1995 the 40 percent surcharge on home electronics and luxury products was abolished, completing the dismantling of the system of import surcharges (Industrial Development Corporation, 1997). A number of changes to agricultural and non-agricultural tariffs also took effect between 1994 and 1996.

These changes, together with the successful conclusion of the Uruguay Round and South Africa's accession to the World Trade Organisation (WTO) required that farm producers now

had to position themselves as business-driven competitors in a less controlled global trading environment (Vink *et al.*, 1998, Esterhuizen and Van Rooyen, 1999, Kirsten, 1999 and Ortman, 2000). Thus, relative competitiveness now plays an important role in determining changes in trade patterns and flows in the South African agricultural sector, particularly when considering the fact that this positioning will not only have to take place in the wake of these forces of change, but also against a world market environment that is characterised by an escalating level of transfers to agriculture, high and escalating tariffs and lack of transparency in developed countries. Market access in these countries is moreover further obstructed by non-tariff barriers in various guises such as complex plant, animal and human health measures (National Department of Agriculture, 2001).

Despite these difficulties, South Africa's integration in the global arena has provided prospects of access to export opportunities. Increased agricultural exports, especially of high-value agricultural commodities, will provide growth impetus for South African agriculture (Kirsten, 1999).

1.2 Literature Review

Changes in agriculture globally mean that farmers can no longer concentrate their energies only on the supply side if they want to remain competitive – they have to take consumer demand as their point of departure. Furthermore, consumer demand can no longer be regarded solely as the demand for quantities of a certain product of given quality. In the modern era, products have to carry other attributes such as the assurance of food safety (hence requiring the introduction of a range of steps to ensure traceability), and of ethical trade (giving rise to the need for changes in the manner in which environmental impact and farm worker quality of life is managed), etc.

As argued by Ackoff (1981) when change occurs it is vital that it must be recognised as soon as possible in order to adapt more rapidly and effectively. Thus the ability to forecast, learn and adapt to change will reduce some of the social pressure brought about by accelerating change. This important insight on change bears significant implications for South African agriculture that has undergone tremendous changes in the last decade. In order to relieve the pressure created by the global changes in agriculture and policy changes introduced in the

1990s in the agricultural sector in South Africa, it is important to forecast, learn and adapt to these changes.

It is from this need to learn and adapt that agricultural economists and economists have made a valuable contribution through researching the impact of policy shifts on the competitiveness of South African agricultural exports to ensure the long-term survival of the sector.

Recent research on the impact of these policy shifts on the competitiveness of South African agricultural exports is well documented. It is worth noting from these studies that a plethora of measures dealing with competitiveness were used to analyse the impact of these policy changes.

As Turner and Van't dack (1993) (quoted in Kahn, 1998) note: "...no single, comprehensive measure of competitiveness can be regarded as the appropriate indicator. Some measures are clearly defective and all are incomplete". The choice of technique is thus very much influenced by the particular question of competitiveness that one wishes to deal with and the availability of suitable data. It is thus not surprising that a plethora of instruments have been used to measure the competitiveness of the South African agricultural sector.

Analyses have been undertaken on both the micro and macro levels and include: Esterhuizen and Van Rooyen (1999), Esterhuizen and Van Rooyen (2001), Van Rooyen *et al.* (2000), Van Rooyen (1998) and Van Rooyen and Esterhuizen (2001) who used Balassa 's (1989) method of Revealed Comparative Advantage (RCA) to analyse the competitiveness of the supply chains in South Africa's agricultural sector. The findings of these analyses is that the competitiveness index decreases when moving from primary to processed products, which implies that value-adding activities in South Africa are limited. Although useful, depending on the specific context in which the RCA is applied, the RCA method is static in nature and thus does not take into account changes in RCA over time. Furthermore, it says nothing about how a country acquires its market share. Market share may well be maintained by costly government incentives.

Analysis of the impact of trade policy and industrial policy on an uneven playing field showed that the Deciduous Fruit Canning Industry in South Africa is internationally competitive (Kaplan and Kaplinski, 1999). They found that market distortions, especially, a combination of protection and subsidies in industrially advanced countries constrain the South African Deciduous Fruit Canning sector. Moreover value-added activities are increasingly located in industrialized countries.

Blignaut (1999), Esterhuizen *et al.* (2001), and Venter and Horsthemke (1999) studied the competitive advantage in the South African dairy industry, the determinants of competitiveness for the South African agribusiness and the competitiveness of Southern Africa's sheep sector relative to the Australian sheep industry respectively, using Porter's (1990) model. Blignaut's (1999) and Venter and Horsthemke's (1999) analyses support the above-mentioned findings that the competitiveness of the agricultural supply chains decreases downstream. Esterhuizen *et al.*'s (2001) analyses, on the other hand, reveal that labour regulations, crime and the quality of physical infrastructure impact negatively on the industry's competitiveness.

An investigation of the aspects of co-operation between South African apple producers, packers and exporters in the Western Cape and Langkloof areas during 2001 was undertaken by Hardman *et al.* (2002). They showed that these players need to commit more resources to make the South African fresh apple export value chain more competitive.

Ortmann (2001) studied the industrialisation of agriculture and the role of supply chains in promoting competitiveness. He concedes that changing consumer demands, new technologies and increasing competition have caused major structural changes in the agro-food sector. These developments, according to Ortmann (2001) have led to increased interdependence among participants in food supply chains from input supplier to producer to processor and retailer. Thus institutional arrangements have developed to improve co-ordination among firms in supply chains, reduce transaction costs and accelerate transmission of information. A major challenge for institutions in South Africa is thus to promote income growth and the competitiveness of small-scale farmers and their participation in value adding supply chains.

The comparative advantages of the primary dryland soybean production and the sugar industry in South Africa using the Policy Analysis Matrices (PAMs) devised by Monke and Pearson (1989) were analysed by Jooste and Van Schalkwyk (1998) and Krabbe and Vink (2000) respectively. While Gronum *et al.* (2001) investigated comparative advantage of the primary oilseeds industry in South Africa using Domestic Resource Cost (DRC), Kirsten *et al.* (1998) analysed the comparative advantage of commercial wheat production in South Africa using a variant of the Domestic Resource Cost measure. The general consensus from these analyses is that South Africa has a comparative advantage in the production of these commodities. Although the analyses of comparative advantage using these techniques is quite revealing, certain considerations have to be borne in mind. The underlying problem with the Policy Analysis Matrix is that it is static in nature and generally focuses on the macroeconomy and thus fails to shed any information on micro-incentives. The DRC and its variant also face the same problems.

Vink *et al.* (1998) studied the competitiveness of Western Cape wheat production relative to other international producers of wheat. The authors' analyses showed that South African yields are low compared to foreign countries whose production costs are higher than those of South Africa, while the net margins for South African producers are less than a third of those for countries that have the same or lower yields as South Africa. With regard to South Africa's changing agricultural trade regime Vink *et al.* (2002) point out that exports of processed foods and beverages and imports of non-traditional commodities have shown strong growth in the post-apartheid and liberalisation era.

The competitiveness of the agricultural sector on the macro-level was analysed by Edwards and Schoer (2001) and Kusi (2002). The general consensus from these analyses is that external market conditions were important determinants of export performance across all sectors of the economy.

Clearly important research was conducted on the impact of agricultural policy shifts in South Africa. Research by Van Rooyen (1998), Venter and Horsthemke (1999) and Vink *et al.* (1998) went as far as comparing the competitiveness of the South African agricultural industry to a similar foreign industry. This was useful for understanding the ability of the SA agricultural exports to obtain and retain market shares.

None of these studies, however, has made a comparison of SA agricultural exports, in particular of high-value agricultural products, with all the members of the Cairns Group¹. Van Rooyen (1998) only analysed the competitiveness of the flower industries of South Africa and Australia. Although Vink *et al.* (2002) analysed the export performance of processed products, they too did not compare the performance of these products with those of the other members of the Cairns Group.

A study that compares SA agricultural exports, in particular high-value products, with those of the Cairns Group is thus justified, because such a study will enhance our existing knowledge on the ability of SA agricultural exports to obtain and retain market share. Moreover, such an analysis will not only act as an instrument capable of evaluating the existing state of export performance, but also of outlining hypotheses and scenarios for the future. In view of this, such an analysis will add to the existing foundation laid by the identified well-documented studies on agricultural export performance for policy and strategic positioning and planning by all participants in agricultural exports to promote value adding and to address weaknesses.

In this study, South African agricultural exports will be compared with those of all the members of the Cairns Group. The following factors largely motivated the choice of the Cairns Group for the purpose of comparison. First, South Africa is part of the Cairns Group and this successful coalition of 17 agricultural export countries accounts for one-third of the world's agricultural exports. The Cairns Group shares a common understanding and vision in international trade regulations in agriculture and it thus fair to speculate that in the future its member countries' agricultural policies will be aligned with each other. This will thus create an opportunity to use measures of competitiveness which are easily distorted by government policies, with some degree of precision and confidence. Second, these countries enjoy the same counter-seasonal advantage in access to developed country markets. And thirdly, these countries constitute a major competitive force in South Africa's highest-value export sub-sectors (Sugar, Wine, Citrus Fruit, Grapes, Apples and Pears) in South Africa's top five

¹ The Cairns Group was formed after its first meeting in Cairns, Australia in 1986 with the single objective of ensuring that agricultural trade liberalisation remained high on the agenda of the Uruguay Round and subsequent multilateral trade negotiations. Its membership comprises of the following WTO members: Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Guatemala, Indonesia, Malaysia, New Zealand, Paraguay, Philippines, South Africa, Thailand and Uruguay (Anderson, 2002).

export destinations (United Kingdom, Netherlands, Belgium, Japan and Mozambique). Thus, a comparison with these countries presents a realistic picture of our future prospects in these markets.

1.3 Problem Statement

When the South African government embarked on a process of trade policy reform in the mid-1990s that aimed to reverse decades of inward industrialisation strategies towards outward industrialisation strategies to promote economic growth and development, there was an expectation that a move away from low-demand growth products towards commodities with stronger demand growth and buoyant price trends would be encouraged.²

This expectation was justified by the findings of Athukorala and Sen (1997), Prebisch (1950) and Singer (1950). Athukorala and Sen (1997) concluded that inter-country differences in growth rates of developing countries were influenced more by the policy regimes than resource endowments which are key determinants of primary export growth. Prebisch (1950) and Singer (1950) showed that the relative prices of primary products would decline over the long-term and that developing countries that were led by comparative advantage to specialise in them would therefore find their prospects for development diminished.

The central question to be addressed in this study is therefore to ascertain the extent to which South African agricultural exports are moving up the value chain relative to the agricultural exports of the other members of the Cairns Group.

The second research question that the study addresses is to determine whether South Africa's movement up the value chain (value adding activities) in agricultural exports is more competitive than the other members of the Cairns Group.

² Jaffee and Morton (1995) explain the emphasis on high-value products and they argue that high-value agricultural products feature relatively high-income elasticities of demand in comparison with staple food crops. Second, these commodities offer greater potential for the development of domestic markets and of intra-regional trade than do most of the region's traditional export commodities (especially beverage crops). And lastly, many of these commodity groups have exhibited very favourable international market trends which contrast with the patterns for the major traditional exports.

In order to fully address these broad research questions a further breakdown of the question into smaller discrete units is required. These units are meant to make the research question easier to comprehend and solve. The following sub-questions refine the broad research questions.

1.3.1 Sub-Questions

- What are the magnitudes in value of South Africa's and the Cairns Group's agricultural export levels in global terms?
- What are the magnitudes in value of South Africa's and the Cairns Group's agricultural exports at product level in global terms?
- What are the growth patterns of South Africa's and the Cairns Group's agricultural exports over the period 1997-2001?
- What are the magnitudes of South Africa's and the Cairns Group's agricultural exports at category level in global terms?
- What is South Africa's and the Cairns Group's competitive status with respect to selected agricultural exports in global terms?

1.4 The Purpose of the Study

The primary objective of this study is to compare South African agricultural exports with those of the Cairns Group.³ This will indicate the extent to which SA agricultural exports are moving up the value chain relative to the other members of the Cairns Group's agricultural exports. According to Kirsten (1999) increased agricultural exports, especially of high-value agricultural commodities, will provide growth impetus for South African agriculture. It is also widely felt that if developing countries (including South Africa) can move away from low-

³ Implicit from the primary purpose of this study is that the research focuses entirely on analysis rather than synthesis of the extent to which South African agricultural exports relative to other members of the Cairns Group's agricultural exports are moving up the value chain. According to Ackoff (1981) analysis focuses on structure, that is how things work, whereas synthesis focuses on function, that is why things operate as they do. Therefore, analysis yields knowledge and synthesis yields understanding. The former enables us to describe and the latter enables us to explain. This research thus aims to set the scene for the latter to occur.

This serves as the limitation of this study since the study will only yield knowledge not understanding of the extent to which South Africa and other member of the Cairns Group are moving up the value chain.

demand growth products with stagnant price trends towards products with stronger demand growth and buoyant price trends, then more solid foundations will be laid for the promotion of sustainable poverty-focused development.

The second objective is to determine The second research question that the study addresses is to determine whether South Africa's movement up the value chain (value adding activities) in agricultural exports is more competitive than the other members of the Cairns Group.

1.5 Methodology and use of data

The study makes use of information obtained from the Food and Agriculture Organisation of the United Nations (FAO), Trade and Industrial Policy Strategies (TIPS) and the World Trade Organization (WTO) publications on international trade statistics⁴ 2002. Food and Agriculture Organisation provides statistics on crops, livestock, irrigation, land use, fertiliser, pesticide consumption and agricultural machinery. Trade and Industrial Policy Strategies online hosts several economic and trade databases from leading global statistical and research institutions. Currently these include SA Trade Map, SA Standard Industry data, SA and international economic databases (TIPS, 2003). It is worth noting that South Africa reports to these international trade organisations as the Southern African Customs Union (SACU)⁵. This does not present any special problem as South Africa accounts for the greatest majority of SACU economic activity, a point noted by McCarthy (2000).

According to McCarthy (2000) intra-regional trade in the Southern African Customs Union (SACU) is reflected in a massive trade balance in favour of South Africa. McCarthy describes this pattern of trade as having characteristics of a regional hub-and-spoke pattern with the

⁴ However, international trade statistics have their limitations, including misreporting, problem of re-exports, historical data, exclusion of services, less coverage in terms of quality and new products integrated in HS with delay (for instance, organic products). This has a particular bearing in the context of the primary objective of this study. It places a limit on the extent to which the researcher can choose agricultural products and foods designated as high-value products. For instance, although jam, bakery savoury crackers, bacon crackers and yoghurt without preservatives are regarded as high-value products, they are not included in the FAO database. Further more, Friedrich (2002) argues that international trade statistics do not reveal the real situation of countries. However, this is mainly associated with the source of information, the level or efficiency of information services of various countries. The other shortcomings include the nomenclature that is not always detailed sufficiently and the informal trade (smuggling) that is not covered.

⁵ The Southern African Customs Union consists of South Africa, Botswana, Lesotho, Namibia and Swaziland.

dominant flow of trade centred on South Africa as the hub and the four smaller members as spokes. The WTO international trade statistics for 2002, on the other hand, provide comprehensive, comparable and up-to-date statistics on trade in merchandise and commercial services for an assessment of world trade flows by country, region and main product groups or service categories (WTO, 2002).

Information obtained from the literature is also used. The revealed comparative advantages for the members of the Cairns Group in selected agricultural products are calculated from the information on both export and import values from the above-mentioned sources. The revealed comparative advantages are calculated using Vollrath's (1991) improved version of Balassa's (1965 and 1989) original version of revealed comparative advantage, namely the Relative Trade Advantage Index (RTA) which gives the difference between the relative export advantage index and the relative import penetration index.

The RTA Index is the preferred technique to accounting methods such as the Policy Analysis Matrix and Domestic Resource Costs to address the second research problem in Chapter four section 4.3, because it based on trade data rather than domestic market information. Although, this is not without problems, one advantage of using trade data is that demand and supply responses are considered simultaneously. Since comparisons based on accounting methods do not consider these interdependencies, the two sets of measures are not exactly the same. Further, the use trade data has an added advantage in that it considers the costs of marketing and transport to and from the port of entry, and this is another characteristic which distinguishes the RTA Index from the measures based on accounting methods. As Frohberg and Hartmann (1997) correctly state competitiveness is a relative measure and indicators based on absolute production and marketing shares give little information on the competitive position of a product, sector or subsection in an economy. Thus indicators that compare one sector relative to others should be considered instead and hence the use of the RTA Index in this study. A detailed description of the RTA and other measures of competitiveness index is given in Chapter Three.

1.6 Outline of the Study

Chapter Two gives some background to the Cairns Group. Chapter Three gives a brief description of the methodology employed in this study. Chapter Four outlines South African and the Cairns Group's global agricultural trade perspectives and their agricultural trade perspectives on agricultural product categories. Competitive advantage for selected agricultural exports is also determined in this chapter. Lastly, Chapter Five draws conclusions from the results derived in Chapter Four and this serves as the culmination of the study.

1.7 Terminology

The terms that are frequently used in this study are:

- bulk agricultural products;
- intermediate agricultural products;
- consumer-oriented or high-value agricultural products.

For the purpose of this study, the terms are defined as follows:

- Bulk agricultural products include those commodities which have received little or no processing, such as wheat, maize, tobacco and soybeans;
- Intermediate agricultural products consist mostly of semi-transformed products that have received some processing, but are generally not yet ready for final consumption, such as wheat flour, vegetable oils, and hides and skins. Slaughter animals are classified as intermediate products because they are veld fed then furnished with mixed feeds, maize and oilseed meal before they are processed further into meat cuts. All live animals are included in this category, since another stage is required to make them ready for consumption.
- High-value or consumer-oriented agricultural products are products which are ready for final consumption. They have either undergone substantial transformation or have been prepared in a way that makes them fit for final consumption. Examples include wheat flour that has been further processed into noodles and bakery products, while vegetable oils become salad dressings. In some cases, however, products classified as consumer foods may also be used by food processors as ingredients in other foods. These products, some of which are not

ready for final consumption, can include spices, dairy and egg products, tree nuts and dried fruits. While most consumer-oriented products have undergone various degrees of processing, the category also includes unprocessed items that have relatively high per unit values as a result of high transportation or storage costs. Good examples include fresh fruit and vegetables and nursery products.

CHAPTER 2

A BACKGROUND ON THE CAIRNS GROUP

“Time and again the Cairns Group provided a balance wheel to the ideological differences over agriculture between the European Community and the United States, nearly always leading to a constructive outcome”.

Yeutter (2002).

2.1 Introduction

The General Agreement on Tariffs and Trade (GATT) represents one of the significant achievements of the Uruguay Round of international trade negotiations to begin to remove barriers to world trade in agriculture. The agreement was a landmark in several respects in the history of the GATT, now the World Trade Organization (WTO). It reversed a trend of steady increases in the protection of agriculture while trade barriers on industrial products were being progressively reduced. The GATT heralded the actual emergence of a global vision of economic co-operation and integration based on negotiations among member countries in order to promote a movement towards freer trade.

On the negative side, the actual degree of liberalisation achieved was limited. In the process of eliminating non-tariff measures, prohibitive tariffs were adopted, in some cases creating an even higher level of protection.⁶ The restrictions on the use of subsidies were limited. Allowance for use of subsidies was generous, whereas controls on the use of subsidies in the industrial sector had become very tight (Oxley, 1998). The major culprits that drove the negative side of trade liberalisation were the European Union, Japan, and the United States. This dynamic interaction between the US and the European Union (EU) formerly the

⁶ Japan's agricultural tariffs are over 100 percent. In the case of the of the EU, 60 percent of its tariffs on basic cereals are over 20 percent and 53 percent of its tariffs on sugar and cocoa, which are key products for many developing countries, are classified as tariff peaks. The EU's meat tariffs peak at 826 percent. As stated in the World Bank's (2000) World Development Report titled "Attacking Poverty", tariff levels this high have undermined the success of trade reform in developing countries and inhibited efficient producers.

European Community (EC) in which impasses were as common as progress, created a natural role for the Cairns Group in negotiations.⁷

The purpose of this chapter is to provide background on the Cairns Group. This is to be achieved by looking at the evolution, the key contributions and current objectives of the group. This chapter draws a great deal on the study undertaken by Oxley (1998) on the history of the Cairns Group.

2.2 The Evolution of the Cairns Group

2.2.1 The Formation of the Cairns Group

The Cairns Group was formed in 1986 through the efforts of the Uruguay government, who invited officials from Argentina, Australia, Brazil and New Zealand to a meeting in Uruguay to discuss tactics for promoting agriculture in the forthcoming round of multilateral trade negotiations.

In August 1986 they were joined by representatives from Canada, Chile, Columbia, Hungary and four ASEAN countries at a meeting of officials hosted by Thailand to discuss reform of agricultural trade and to review preparations that were taking place in Geneva for the launch of the Uruguay Round, scheduled to be held in Uruguay in December of the same year (Oxley, 1998 and Cairns Group, 2003).

The five countries (Argentina, Australia, Brazil, New Zealand and Uruguay) that attended the meeting in Thailand withheld assent to the agriculture segment of the draft objectives of the Uruguay negotiations. The French were to be more dramatic. They blocked EU assent to all of the objectives because the objectives for agriculture went too far. The whole issue was to be referred to the meeting of ministers in Uruguay. They were supposed to rubber-stamp the

⁷ According to Capdevilla (2000) the wealthy nations of the Organisation for Economic Co-operation and Development (OECD) in 1999 spent a combined total of \$360 billion to cover losses in their agricultural sectors. Meanwhile, the 17 countries of the Cairns Group which represent 750 million people and one quarter of world agricultural trade emphasise the efficiency of their farming and operate with scant or zero state aid.

results from Geneva, not negotiate. Disagreement on agriculture imperilled the Round even before it started.

Before the conference opened in Punta del Este in Uruguay the ministers of the countries who had met in Thailand, plus Fiji, met in Cairns in Northern Australia. The position adopted by France and the EU was unacceptable to them and they resolved to collaborate at the meeting in Uruguay to press their interests. At the meeting in Punta they became known as the Cairns Group (Oxley, 1998 and Cairns Group, 2003).

The group now consists of 17 agricultural exporting countries that account for one third of the world's agricultural exports. It includes: Argentina, Australia, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Guatemala, Indonesia, Malaysia, New Zealand, Paraguay, the Philippines, South Africa, Thailand and Uruguay (Cairns Group, 2003).

2.2.2 Status of the Group

The United States quickly gave the new group status at the conference, as they saw the Cairns Group as a strategic ally to put pressure on the EU. So the US incorporated the Cairns Group into the negotiating equation, creating a three-way rather than the traditional two-way inner-core of negotiations between the US and the EU.

According to Oxley (1998) this set up the modus operandi of the agriculture negotiations almost until the end of the Uruguay Round when final details of the Uruguay Round Agriculture Agreement were settled between the US and the EC. The combined pressure of the US and the Cairns Group forced the EC to make some further concessions at Punta, although in retrospect these were small. Despite the fact that they were small concessions this did generate the political will among the members to consolidate and build up the group.

2.2.3 Consolidation of the Group

Members of the group realised that they needed to do more than just agree at a political level to collaborate. The group set about negotiating a common set of negotiating targets. This was difficult because in most areas Cairns Group members were competitors in world markets. On the other hand, officials were familiar with each other's interests. According to Oxley (1998) many had worked together in international commodity groups and there was a considerable reserve of goodwill. A new ingredient was the political will at a higher level which had been forged at Punta.

The group thus developed a common position on targets and modalities for the negotiations which all agreed to sponsor formally. The substance was important. It laid out basic approaches which were to influence the shape and outcome of the negotiations. This step constituted the final consolidation of the group as a formal caucus. The group consolidated further at the political level as well. The practice of holding annual meetings of ministers began and was very important.

2.2.4 Administrative Structure of the Group

The officials of the Cairns Group delegations in Geneva effectively formed a standing group which served as a secretariat. The Australian mission co-ordinated this activity and provided administrative support. This is where positions for the group were drafted and prepared. Retreats were regularly held with senior and expert officials to work through positions.

To date the Cairns Group still operates through ministers and officials at a government level. Farmers' organisations in the individual countries are closely consulted by their governments to frame Cairns Group policies and positions (Yeutter, 2002).

2.2.5 Contribution of the Cairns Group

Meaningful reforms were achieved for the first time in the Uruguay Round negotiations of 1986-94. Many played a part in that achievement, but the role of the Cairns Group according to Yeutter (2002) was critical: first, in helping to launch the negotiations; second, in maintaining a focus on agricultural trade; and third, in pushing the major trading powers towards an agreement on agriculture, one that entailed specific binding commitments on domestic support, market access and export subsidies.

The Cairns Group also created a new dynamic. Until the Uruguay Round, if the US and the EC could not concur, agriculture issues were just not considered. Protest by other agricultural exporters made no difference. The Cairns Group represented the interests of initially fourteen, now seventeen countries whose collective importance in world agriculture was patent. The US and the EC no longer exercised a collective veto over how agriculture should be handled in the GATT/WTO (Oxley, 1998; Sharp, 2002; and Valente, 1999).

2.2.6 Reasons for the Success of the Group

The reasons for the success of the group were as follows (Oxley, 1998; Sharp, 2002; and Cairns Group, 2003):

- It gave voice to a repressed interest

Individually the members of the Cairns Group never had enough influence to bring agricultural issues on board in the General Agreement on Tariffs and Trade (GATT). The processes of the GATT meant that a significant trade interest of these 'small agricultural exporters' had no effective representation in the GATT. Thus the group immediately gave a voice to a significant interest which had previously been repressed.

- Single-issue group

The Cairns Group concentrated their efforts only on issues regarding agriculture. This was critical as wide differences of opinion existed in other areas of trade. Thus, by concentrating on agricultural issues only, the Group was able to avoid divisions amongst its members.

- Clear strategic goals were set

The Group was diligent at the outset in setting out the primary strategic goals. This had two effects. It prevented differences over details from exacerbating differences within the group. It also gave the Group a leadership role in the shaping of the negotiations.

- Common interests outweighed the differences

Members of the Group worked to keep the focus on the interests that they had in common. This was fundamental. Their interest in securing rules that would open world markets was greater than the interest of any one member in trying to secure more favourable access on preferential terms to any one market.

- The Group's tactics served a wider interest

The initial success of the Group was in part because its strategy was to support an aggressive push by the US to open up world agricultural markets. At the outset the Group was seen by the EC as an ally of the US. And when the EC and US were at loggerheads over their ideological differences, each side looked to the Cairns Group for support. A second strategy of the Group was to support the negotiating process itself. At various points the EC and the US found that this corporate interest of the Cairns Group was very valuable.

- The Group knew its limits

The final result of the Uruguay Round on agriculture was far less satisfactory than the Cairns Group originally sought. The Group had always known that this would be the case. It reserved judgement on what would be finally acceptable until it was clear what range of options were feasible. It thus understood that there were finite limits on the influence it could bring to bear, as the process moved into its final phase.

2.3 Current Objectives of the Cairns Group

2.3.1 The Cairns Group's Expectations in the Doha Round

The Cairns Group expected that the DOHA text needed to reflect the following elements in order to integrate agriculture fully into the WTO rules (Anderson, 2001; Sharp, 2002; and Cairns Group, 2002):

- Political commitment to end discrimination

The Group looked for recognition that liberalisation under a rules-based world trading system had effectively by-passed agriculture. As a consequence agricultural trade is still subject to higher levels of and types of subsidies and protection in developed countries. Thus removing such distortions in the world market would give all countries the opportunity to realise their comparative advantage in agriculture.

- Ambitious and specific goals

The Cairns Group looked for specific ambitious reform goals for each pillar of the Uruguay Round framework namely market access, domestic support and export competition. The Group thus sought the elimination of all forms of export subsidies leading to substantially improved market access

- Clear structure for the negotiations

The Group sought a clear understanding of the timetables and benchmarks for concluding the agricultural negotiations expeditiously and a structure that will facilitate early and efficient conclusion of the negotiations.

- Special and differential treatment⁸

The Cairns Group recognised the importance of providing concrete special and differential treatment provisions in the area of domestic support to assist developing countries. Provisions were aimed at enabling developing countries to address their legitimate and varied needs, including agricultural and rural development, food security and subsistence and small-scale farming for the development of domestic food production.

⁸ In terms of special and differential treatment for developing countries, the Group called for operational special and differential treatment provisions and greater improvement of opportunities and terms of market access. The Group contended that there should be faster and deeper cuts in or elimination of tariffs on all agricultural products, including value-added products produced in and exported by developing countries. The Group also called for the preservation of current special safeguards for developing countries to assist with domestic and

2.4 The Outcome of WTO Cancun Negotiations

With stalemate in the ongoing global trade negotiations looming by July 2003, it was clear that a long list of required action items faced ministers at Cancun. However, hopes for a breakthrough still accompanied the September 2003 meeting in Cancun, although the ministers from WTO members were ultimately unable to bridge the wide substantive differences on key issues that faced them coming into Cancun, and as a result these key issues must still be dealt with for the round to continue.

According to The United States Mission to the European Union (2004) several factors influenced the outcome of and contributed to the impasse at Cancun. The agenda for Cancun itself was large and complex because WTO members had missed earlier deadlines for decisions. As a result, ministers were asked to achieve in five days what had proved impossible to accomplish in the prior twenty-two months. Meanwhile, the sheer number of participating countries and emerging alliances made consensus building difficult. For example, the assertive approach to agricultural reform by a group of key developing countries led by Brazil put the United States and the EU, traditionally at odds over agriculture, on the defensive together against calls for cuts in their domestic support payments.

North-South tensions between developing and developed countries, already latent in the declaration that launched the round became exacerbated. Noting that the ongoing talks are termed the Doha Development Agenda, developing countries stressed their vision that the focus should be addressing their needs and demands. However, developed countries were not prepared to liberalise their policies unilaterally. Faced with wide substantive divergences and limited decision-making procedures the WTO proved unable to build the consensus required for attaining agreement at Cancun.

The Cairns Group remains committed to its earlier propositions despite the Cancun impasse. In fact, the Group agrees that to be successful the negotiations must result in a certain end date for the elimination of export subsidies. In their words (Cairns Group, 2004) “We also believe that the three pillars are linked and therefore need a high and balanced level of ambition across all the pillars of the agriculture negotiations, not least domestic support. The Cairns Group calls on all WTO Members to renew their efforts to produce a timely outcome

international agricultural reform efforts and to counter subsidised competition (Raghavan, 2000).

in the agriculture negotiations with a level of ambition which meets the mandate decided in Doha.”

2.5 The emergence of G-20⁹

The G-20+ was formed on the 9th September 2003 with the purpose of creating a new mechanism for informal discussions on key economic and financial policy issues among globally significant economies. The establishment of G-20+ also served to promote cooperation and achieve stable and sustainable world growth that benefits all (World Development Movement, 2003). However, the Group’s formation has already caused some discomfort in the Cairns Group, as most Cairns Group members have joined the G-20+, and some fear the new group's championing of developing countries' concerns could split the Cairns Group which includes Canada and New Zealand, as well as Australia. The Cairns Group member countries endorsing the proposal are Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, Guatemala, Paraguay, the Philippines, South Africa and Thailand. Australia’s influence in world trade talks is being challenged by the G-20+ alliance that could undermine the Australian led Cairns Group. Australia for instance is not a member of the G-20+ group. One logical reason for non-participation could be that the G-20+ proposals fall short of a call for immediate full liberalisation (Davis, 2003).

The G-20+ Group is more accommodating to some developing countries (India and China) who are not members of the Cairns Group. India and China would prefer slow reduction of tariffs as they have higher tariffs than most developing countries that are members of the Cairns Group and the G-20+ proposal of eliminating export subsidies at the date to be agreed during negotiations is more appealing to these countries and some African countries than the Cairns Group’s elimination of export subsidies by developed countries within four years, with an initial cut of 50% at entry on the coming into force of the Doha Development Agreement. The Cairns Group’s proposal for a rapid removal of subsidies was surely not attractive to these countries as most still benefit from higher priced quota exports from the EU and US and cheaper imports for net food importers.

⁹ The G-20+ Group consists of Argentina, Bolivia, Brazil, Chile, China, Colombia, Costa Rica, Cuba, Ecuador, Egypt, Guatemala, India, Mexico, Pakistan, Paraguay, Peru, Philippines, South Africa, Thailand and Venezuela (Bulland, 2004).

However, the creation of G-20+ has prompted concern over an increasing spread of one economic worldview. Criticism focuses on concern that one dominant economic system will spread through G-20+ to an increasing reach of nations and become the prevailing method of operation, regardless of whether or not those ideas are suitable for each particular economic region.

1.7 Concluding Remarks

Securing international agreement on the liberalisation of agricultural trade has been a struggle of epic proportions. The constant ideological differences over agriculture between the European Community and the United States created a natural role for the Cairns Group. The role of the Cairns Group was critical in, first, helping to launch the negotiations; second, in maintaining a focus on agricultural trade; and third, in pushing the major trading powers towards an agreement on agriculture, one that entailed specific binding commitments on domestic support, market access and export subsidies. The following features may be attributed to the success of the Group:

- The Cairns Group gave voice to a repressed interest,
- It focused only on a specific issue (agricultural reform),
- It set clear strategic goals,
- The common interest of members outweighed differences,
- The group's tactics served wider interests;
- The group knew the limits of its influence.

Throughout the negotiations the Cairns Group was catalytic, sensible and pragmatic. To this end the Cairns Group is united in its resolve to ensure that the current WTO agriculture negotiations achieve fundamental reform, placing trade in agricultural goods on the same basis as trade in other goods. The emergence of G-20+ Group will not replace the Cairns Group. It is not yet ready to address differences among the members' positions. Moreover, the Cairns Group's proposals still seem better suited than the G-20+s' for many developing countries. Furthermore, the dynamics of trade negotiations sometimes need different groupings for different problems.

**METHODS AND TECHNIQUES TO DETERMINE COMPARATIVE AND
COMPETITIVE ADVANTAGES**

“No single, comprehensive measure of competitiveness can be regarded as the appropriate indicator. Some measures are clearly defective and all are incomplete. The choice of measurement is thus influenced by the particular question or facet of competitiveness that one wishes to deal with”.

Turner and Van ‘t dack (1993) (quoted in Kahn, 1998).

3.1 Introduction

The concepts of comparative advantage and competitiveness¹⁰ are two important foundations for understanding the importance of international trade in agriculture and to illuminate the underlying factors responsible for current trade patterns. Although there is a general consensus on what defines comparative advantage, there is little consensus on what defines competitiveness, despite the fact that the term competitiveness has generated a great deal of debate.

Paul Krugman stands out amongst the many sceptics regarding the concept of competitiveness.

¹⁰ The concept of competitiveness in its latest and most popular form was developed by Michael Porter (1990) the author of three best sellers published in 1980 and 1990. Porter (1990) used the doctrine of comparative costs to explain comparative advantage and competitiveness. Theoretically Porter (1990) noted that it (competitiveness) depends on three factors, namely (i) a highly competitive macroeconomic environment, (ii) an innovative capacity to develop and adopt technology to reduce production costs and diversify and differentiate products, and (ii) competitive markets. Warr (1994) disagreed with this explanation and argued that the two concepts are not the same and any attempt to portray them as being the same or at least similar is misleading.

According to Krugman (1994 and 1996) defining national competitiveness in a specific context of trade (i.e. as export competitiveness) is a futile exercise and is dangerous both because it implicitly proves a misunderstanding of the theory of comparative advantage and the benefits of free trade and because it implies a mercantilist view of the world. Krugman contended that it is firms and not countries that compete for exports, although it is true that trade statistics are presented as an aggregate. National economies are not in direct competition with one another and nations do not go bankrupt in the way firms do. Krugman (1994) thus argued that the notion of competitiveness at the national level makes no sense and claimed that the term was becoming in fact a “dangerous obsession”.

While Krugman’s argument has a great deal of validity, its limitations should be appreciated. First, the conclusions of a neo-classical trade model depend on extremely restrictive and unrealistic assumptions, such as efficient markets, homogenous products, universal access to technology with no learning costs, no externalities or scale economies, technically efficient firms and (especially) fully employed resources. A second limitation is that, contrary to received trade theory, in the real world export structures are path-dependent and difficult to change. Trade patterns are much less responsive to changing factor prices than commonly assumed. They are the outcome of a long, cumulative process of learning, agglomeration and increasing returns and institution building and the overall business culture. This means that the world’s pattern of specialisation and trade is the result of history, accidents and past government policies. Thus it is not dictated only by comparative advantage which is determined by tastes, resources and technology (Cohen, 1994 and Roman, 2003).

In view of the above discussion, the following definitions of comparative and competitive advantage are adapted. Comparative advantage¹¹ refers to the ability of one nation to produce a commodity at a lesser opportunity cost of other products forgone than another nation (Lipsey *et al.*, 1993). In other words, comparative advantage indicates whether it is economically advantageous to expand the production and trade of a specific commodity. It is a concept that applies to inter- and intra-industry comparisons within a country in the traded goods sector, but inappropriate for inter-country comparison (Kannapiran and Fleming, 2000). Competitive advantage, on the other hand, indicates whether a firm could successfully

¹¹ According to Kannapiran and Fleming (2000) the concept of comparative advantage is most relevant for nations that are currently producers of primary products and standardised manufactured goods, while the concept of competitiveness has most to offer individual firms that produce differentiated products and goods and services sold in specific market segments.

compete in the trade of the commodity in the international market, given existing policies and economic structure (Warr, 1994). Competitiveness is thus determined by the commercial performance of individual firms, whereas comparative advantage is about the efficient allocation of resources at the national level, especially among sectors of the economy producing traded goods and services.

Kannapiran and Fleming (2000) explicitly support Cohen (1994) and Roman 's (2003) observations about the neo-classical assumptions of trade theory. Kannapiran and Fleming (2000) note that competitiveness and comparative advantage would be the same in a world of perfect competition in which there are homogeneous products, perfect information and an absence of market failure. In the real world, however, the two indicators typically diverge because of distortions in input and product marketing systems. It is thus important to calculate both measures and identify the reasons for divergences.

Measures of comparative advantage are among the most useful guides to optimal resource allocation in an open economy where international trade is vitally important. And yet the many and diverse methods developed to measure comparative advantage and competitiveness of an economy make the task complex. The quality of the results obtained with these indicators or measures depends to a considerable extent on the quality of the data available. The quality, type and amount of data required also vary between the measures and hence the choice of the index to be used is often dictated by data availability (Frohberg and Hartmann, 1997). Given this, it is not unexpected that the literature on comparative advantage and competitiveness in South Africa is diverse and covers a broad range of comparative advantage and competitiveness measures (Edwards and Schoer, 2001).

In South Africa Balassa 's (1965 and 1989) method of RCA, Bruno (1976) and Krueger (1966) 's Domestic Resource Cost, Monke and Pearson 's (1989) PAM model, Porter 's (1990) model, and recently, the International Trade Centre 's (2000) Trade Performance Index have been widely used to measure comparative advantage and competitiveness (Edwards *et al.*, 2000, Edwards and Schoer, 2001, Esterhuizen and Van Rooyen, 1999, Esterhuizen *et al.*, 1998, Valentine and Krasnik, 2000 and Van Seventer and Molate, 2002).

The purpose of this chapter is to give a description of the measures of comparative advantage and competitiveness after which a selection of the technique to be used to determine optimal collaboration patterns for partnerships will be made. A positive concept is followed in which the choice of the approach or technique to be used is based on the appropriateness of the technique for this study and its ability to produce accurate and relevant results, given its shortcomings.

3.2 Porter's Model

Porter (1990) argued that the question why some nations succeed and others fail in international competition is one of the most frequently asked economic questions and yet it is the wrong question to ask if the aim is to expose the underpinnings of economic prosperity for either firms or nations. Porter (1990) thus offers an alternative and argues that, in order to answer the question why an industry is internationally competitive, another important question has to be addressed first: why does an economy achieve international success in a particular industry?

Porter (1990) points out that there has been no shortage of explanations for why some nations are competitive and others are not. Yet these explanations are often conflicting and there is no generally accepted theory. Some see national competitiveness as a macroeconomic phenomenon driven by such variables as exchange rates, interest rates and government deficits. But nations have enjoyed rapidly rising living standards despite budget deficits (Japan, Italy and Korea), appreciating currencies (Germany and Switzerland) and high interest rates (Italy and Korea).

Others argue that competitiveness is a function of cheap and abundant labour. Yet nations such as Germany, Switzerland and Sweden have prospered despite high wages and long periods of labour shortage. Another view is that competitiveness depends on possessing bountiful natural resources. However, the most successful trading nations, among them Germany, Japan, Switzerland, Italy and Korea have been countries with limited natural resources and that must import most raw materials. A final popular explanation for national competitiveness is differences in management relations. The problem with this explanation,

however, is that different industries require different approaches to management. What is celebrated as good management in one industry would be disastrous in another (Porter, 1990).

Clearly none of these explanations of national competitiveness is sufficient by itself in understanding the competitive position of a nation's industries. Each contains some truth, but will not stand up to close scrutiny. Porter (1990) thus advocates a broader and more complex set of forces and offers the following explanation.

According to Porter (1990) competitive advantage is determined by the following factors: First, factor conditions; the nation's natural position in terms of production, natural resources, level of production costs such as the price of labour, diesel, pesticides, machinery and knowledge and infrastructures necessary to compete in a given industry. Second, demand conditions; the nature of home demand for the industry's product and service and the ability to record this demand, for example, home demand composition, demand size and internationalisation of domestic demand. Third, related and supporting industries; the presence or absence in the nation of supplier industries and related industries that are internationally competitive. And fourth, firm strategy, structure and rivalry; the conditions in the nation governing how companies are created, organised and managed and the nature of the domestic rivalry.

3.3 Domestic Resource Cost (DRC)

The DRC method developed simultaneously by Bruno (1967) and Krueger (1966) measures the gain from expanding profitable projects and the cost of maintaining unprofitable activities through trade protection (Kannapiran and Fleming, 2000). Thus, the domestic resource cost coefficient of a commodity compares the opportunity cost of the primary factors (land, labour and capital) used in the production of that commodity with value added in border prices. The coefficient shows the border priced value of the resources in their best alternative use per unit border priced value of the resources in their existing use (Greenaway and Milner, 1993).

Market prices and exchange rates are used to calculate the financial DRC ratio. The shadow or accounting prices of domestic resources used in the production of a tradable output are

used to calculate the social value of DRCs. The DRCs are then compared with the accounting or shadow prices of foreign exchange earned or saved through the production of the tradable output to calculate the social DRC ratio.

Tsakok (1990) and Warr (1992) interpreted the DRC ratio in three ways. First, the DRC ratio of industry j gives the proportion by which the international price of traded good j , p_j , must be changed for industry j to be one of the tradeable industries that would survive under free trade. If this proportion is smaller than unity, the country possesses a comparative advantage in good j ; if it is greater than unity, the country has a comparative disadvantage in good j ; and if it is unitary this indicates the country has neither comparative disadvantage nor disadvantage in good j .

Although useful, the DRC method has its limitations. The DRC method measures only static efficiency and fails to account for the dynamics of price and quantity changes in input-output relations. This problem can be solved to some extent by carrying out sensitivity analyses. The DRC method does not inform the analyst by how much one activity should be substituted for another to increase economic efficiency. The existence of diminishing returns to factors of production in agricultural activities suggest that the extent of substitution should not be boundless (Kannapiran and Fleming, 2000).

3.4 Policy Analysis Matrix (PAM)

According to Monke and Pearson (1989) the Policy Analysis Matrix could be used to investigate the impact of policy competitiveness and farm-level profits, the influence of investment policy on economic efficiency and comparative advantages and the impact of agricultural research policy on changing technology. The PAM is essentially a double accounting technique that summarises budgetary information for farm and post-farm activities. The method is based upon a familiar identity, i.e. profit equals revenue less costs.

The PAM is measured in two types of prices: private and social. According to Sellen (1999) private values are prices at which we observe goods and services actually being exchanged. Social values are the prices which would prevail in the absence of any policy distortions (such

as taxes or subsidies) or market failures (such as monopolies). They reflect the value to society as a whole rather than to private individuals and are values used in economic analysis when the objective is to maximise national income. Social prices can be seen as world price equivalents or shadow prices measured at the same reference point.

Once all private values have been matched with their social equivalents, the following identities are arrived at (Sellen, 1999):

Private revenue – Private cost of tradeable inputs - Private cost of domestic factors = Private Profit.

Social revenue – Social cost of tradeable inputs – Social cost of domestic factors = Social Profit.

If these identities are juxtaposed in a matrix and an additional line added to present the differences or divergences, the Policy Analysis Matrix is arrived at (Monke and Pearson, 1989). The following table gives a Policy Analysis Matrix.

Table 3.1: The Policy Analysis Matrix.

	Revenues	Cost of Tradable Inputs	Cost of Domestic Factors	Profits
Private Values	$A = \sum P_x Q_x$	$B = \sum P_i Q_i$	$C = \sum P_j Q_j$	D
Social Values	$E = \sum P_x^* Q_x$	$F = \sum P_i^* Q_i$	$G = \sum P_j^* Q_j$	H
Divergences	I	J	K	L

Source: Monke and Pearson (1989).

Where:

- P_x = market price of produce x
- Q_x = quantity of produce x
- P_i = market price of tradable inputs
- Q_i = quantity of tradable inputs
- P_x^* = world price of produce x
- P_i^* = world price of tradable inputs
- D = A minus C
- H = E minus F minus G
- I = A minus E

J = B minus F

K = C minus G

L = D minus H or I minus J minus K.

The PAM is a simple conceptual framework for analysing information at the micro-level and its simplicity invites both praise and criticism. On the one hand, it is easily understood by non-economists, particularly senior policy makers who have neither the time nor inclination to digest complicated numeric results (Sellen, 1999). On the other hand, its simplicity is confining for others. A major criticism is that it is static and does not allow for any supply response. In addition, it is not useful for analysing products that are not traded internationally, since by definition there is no world price.

3.5 The Trade Performance Index (TPI)

The Trade Performance Index¹² was developed by the International Trade Centre Market Analysis Section with the aim of assessing and monitoring the multi-faceted dimensions of export performance and competitiveness by sector and by country (Van Seventer and Molate, 2002). TPI covers 184 countries and 14 different sectors. It reveals how competitive and diversified a particular export sector is in comparison to those of other countries. The TPI brings out gains and losses in world market shares and sheds light on the factors behind these changes. Moreover, it monitors the diversification of export products and markets (International Trade Centre, 2000).

The TPI was developed in order to complement the Microeconomic Index of competitiveness, which according to the International Trade Centre (INTRACEN), may be criticised on the ground of being limited to a small number of developing countries. The Microeconomic Index is based on the micro-foundations of a country's competitiveness. It was launched in 1998 as part of the Global Competitiveness Report. This index is based on a survey of some 4000 businessmen and government officials in 58 countries, including OECD countries. Regressing

¹² The TPI is based on the world's largest database of trade statistics, namely COMTRADE of the United Nations Statistics Division. COMTRADE covers about 90 percent of world trade. The TPI is calculated not only for countries which report their own trade but also for over one hundred primarily low-income countries which do not report national trade statistics and for which the export performance has been reconstructed on the basis of partner country data (International Trade Centre, 2000).

income per capita on this index explains more than 80% of the variance of income in the sample (INTRACEN, 2000).

The TPI provides indicators on a country's general profile, on a country's position and on changes in a country's export performance. Altogether the TPI consists of 22 quantitative indicators of trade performance. For ease of reference these indicators are presented in absolute terms and, in addition, combined to form a ranking among the countries.

Two composite rankings are calculated: one for the overall position of the country and the sector under review and another one for the change in performance. All this information is grouped under three categories referring to general profile, position and change (INTRACEN, 2000).

The composite ranking on the position is based on five criteria and include, a) the value of net exports, b) per capita exports, c) the world market share, d) the diversification of products, and e) the diversification of markets.

The composite ranking of the change in export performance covers the following five criteria, a) the change in world market share, b) the trend of the coverage of imports by exports, c) the specialisation of dynamic products, d) the change in product diversification, and e) the change in market diversification.

In sum, the TPI positions the export sector of 184 countries on an export competitiveness ladder, both from static and dynamic perspectives. Although this approach provides a systematic overview of sectoral export performance, it is limited by its purely quantitative approach.

3.6 Revealed Comparative Advantage

According to Bowen (1983) researchers have employed a number of measures of trade performance to study the structure and determinants of a country's foreign trade. A commonly used family of measures are indices of trade intensity, the most popular member of this family being the index of revealed comparative advantage. Although the form of each index and the interpretation given to their values has varied from author to author, Bowen (1983) contends that the empirical and theoretical literature appear to agree that a country reveals a comparative advantage (disadvantage) in a commodity if an index's value is greater (less) than one.

The concept of Revealed Comparative Advantage (RCA) is grounded in conventional trade theory. The difficulty of measuring comparative advantage itself led Balassa (1965) to investigate trade patterns directly without reference to underlying resources, productivity, subsidies or prices. Balassa (1965) thus argued that revealed comparative advantage could be indicated by the trade performance of individual commodities and countries in the sense that the commodity pattern of trade reflects relative market costs as well as differences in non-price competitive factors. Balassa (1965) who coined the term "revealed comparative advantage", adjusted Liesner's methodology in an attempt to identify the enduring effects of trade liberalisation resulting from the Kennedy Round of GATT (Vollrath, 1991). Balassa's (1965) original method compares a country's share of the world market in one commodity relative to its share of all traded goods. The RCA of commodity j is thus defined as (Greenaway and Milner, 1993):

$$RCA_j = X_{i,j} / \sum_j X_{i,j} \bigg/ X_{w,j} / \sum_j X_{w,j}$$

where i refers to countries $1, \dots, n$ (total of n countries in world), j stands for commodities $1, \dots, m$ and w stands for world, thus

$$X_{w,j} = \sum_{i=1}^n X_{i,j}$$

In this equation a comparison of the share of commodity j in country i 's total exports,

$$X_{ij} / \sum_j X_{ij},$$

with the world share of commodity j in total world exports is made,

$$X_{wj} / \sum X_{wj}.$$

All values greater than 1 signal that the country has a comparative advantage in the production of that product and all values less than 1 signal a comparative disadvantage in the production of that commodity.¹³ Brasili *et al.* (2000) argue that the reason why Balassa's method has gained greater acceptance among applied international trade economists than the measures based on net exports is that it is a more comprehensive indicator of the concept of specialisation. To validate this argument Brasili *et al.* (2000) offer the following insight. Consider, for example, the ratio at the numerator of RCA and compare it to net exports. The former compares country j exports in sector i to the rest of the world exports in sector i and the latter compares country j exports in sector i to country imports in sector i. The former's comparison is thus with respect to all competitors of country j in sector i, whether or not they export to country j, whilst the latter's comparison is only with respect to country j's competitors that export to country j. Therefore the former is a better measure of the overall specialisation pattern of a country.

The improved version of Balassa's original index, namely the Relative Revealed Comparative Trade Advantage (RTA) index to reflect both imports and exports, is offered by Vollrath (1991) and defined as:

Equation 1:

$$RTA_{ij} = RXA_{ij} - RMP_{ij}$$

Equation 2:

$$RXA_{ij} = \left(X_{ij} / \sum_{1,1 \neq j} X_{i1} \right) / \left(\sum_{k, k \neq i} X_{kj} / \sum_{k, k \neq i} \sum_{1,1 \neq j} X_{k1} \right)$$

Equation 3:

$$RMP_{ij} = \left(M_{ij} / \sum_{1,1 \neq j} M_{i1} \right) / \left(\sum_{k, k \neq i} M_{kj} / \sum_{k, k \neq i} \sum_{1,1 \neq j} M_{k1} \right)$$

¹³ According to Vollrath (1991) Liesner was the first to use post-trade data in an effort to quantify comparative advantage. Liesner (1958) devised indexes of relative export performance as proxies in an effort to assess the effects of entry into the European Common Market on British industry.

In equations 2 and 3, $X(M)$ refer to exports (imports), with the subscripts i and k denoting the product categories, while j and l denote the country categories. The numerator is equal to a country's export (imports) of a specific product category relative to the export (import) of this product from all countries except the country under consideration. The denominator reveals the exports (imports) of all products but the considered commodity from the respective country as a percentage of all other countries' exports (imports) of all other products.

The competitive advantage revealed by RTA is implicitly weighed by the importance of the relative export and the relative import advantages. Hence, it is not dominated by extremely small export or import values of the commodity considered. The level of these indicators shows the degree of revealed export competitiveness and import penetration. Values below (above) zero point to a competitive trade disadvantage (advantage).¹⁴

While the RXA and the RMP indexes are exclusively calculated using either export or import values, only the RTA considers both export and import activities. From the point of view of trade theory, this seems to be an advantage. Due to the increase in intra-industry trade, this aspect, according to Frohberg and Hartmann (1997) is also becoming increasingly important. In addition Frohberg and Hartmann (1997) contend that RMP can be very misleading since it can be heavily distorted due to protection of domestic markets.

In the extreme case of an import ban or a prohibitively high import tariff, this measure indicates a high level of competitive advantage, while the reverse might be the case. Another factor, which can lead to a distortion of all indicators considering exclusively either exports or imports, is the existence of intra-industry trade. If, for example, a country only acts as a transit country, the RXA might indicate high levels of competitiveness that would be purely superficial (Pitts and others, 1995, quoted in Frohberg and Hartmann, 1997). Therefore in considering both exports and imports the RTA is a more comprehensive and superior measure.

¹⁴ In theory Vollrath's (1991) specification improved Balassa's original index by eliminating the double counting of country and commodity in world trade. It accounts for all traded and all countries, rather than subsets and is therefore global in nature.

However, Frohberg and Hartmann (1997) point out that there are numerical problems with all three indexes. The RXA and RMP are bound from below by zero, but unbounded from above. The RTA is not bound from below either, but a switch in sign indicates a change in competitiveness. Were these indexes completely bounded, the interpretation of any value they took on would be easier in the sense that one would be in a better position to assess the extent of a country's lack of competitiveness. It is also difficult to interpret the results of these three measures if they show large annual fluctuations which are due to structural changes (Frohberg and Hartmann, 1997).

Vollrath (1987 and 1991) suggested another alternative specification of RTA which is simply the logarithm of the relative export advantage ($\ln\text{RXA}$) and the revealed competitiveness (RC) defined as $\ln\text{RXA}$ minus $\ln\text{RMA}$ (logarithm of the relative import advantage). The advantage of expressing these indices, according to Vollrath (1987 and 1991) is that they become symmetric through the origin. Positive values of RTA, $\ln\text{RXA}$ and RC reveal a comparative or competitive advantage.

A problem with these and other similar indices is that observed trade patterns are likely to be distorted by government policies and interventions, and may therefore misrepresent the underlying comparative advantages (Ferto` and Hubbard, 2001). This is especially true of the agricultural sector where government interference is commonplace, a point noted by Balassa (1965). For this reason Vollrath (1987 and 1991) suggested that RXA and $\ln\text{RXA}$ are preferable because they are less susceptible to policy-induced distortions, which tend to be more pronounced on the import side. However, Ferto` and Hubbard (2001) refute this suggestion and argue that export subsidies have been widely used in agriculture and there would appear less of an argument in this respect in favour of RXA and $\ln\text{RXA}$. The measure is static in nature and does not take into account changes in RCA over time. Furthermore, it says nothing about how a country acquires its market share. Market share may well be maintained by costly government incentives.

Thus far, one aspect of the purpose of this Chapter has been dealt with accordingly (the description of measures of comparative and competitive advantages). It is thus now appropriate to turn to the second aspect of the purpose of this Chapter, being the selection of the technique to be used for determination of agro-food chain competitiveness.

Vollrath's (1991) RTA specification will form the basis of analysis in this study to determine the competitive advantage of selected agro-food chains. As noted in the introduction of this chapter, a positive concept was to be followed in selecting the method to be used for analysis. The RTA fits this criterion, since it is able to produce accurate results, even given its shortfalls. The RTA index also eliminates the double counting that is associated with the original Balassa method, although double counting would not present any special problem as the researcher is using low levels of commodity aggregation. As noted earlier, competitiveness is a relative measure and indicators based on absolute production and marketing shares give little information on the competitive position of a product, sector or subsection in an economy. Thus indicators that compare one sector relative to others should be considered instead and hence the use of the RTA Index in this study.

3.7 Concluding Remarks

The purpose of this chapter was to describe the various methods used to measure comparative and competitive advantages. As Turner and Van't dack (1993) (quoted in Kahn (1998) note, "no single measure of competitiveness can be regarded as the appropriate indicator. Some measures are clearly defective and all are incomplete"; this is exactly what has emerged in this chapter. The DRC, PAM model and TPI are useful measures of comparative and competitive advantages, but they must be applied with caution. The measures are static and do not account for supply response.

The same is true with the Balassa method which compares a country's share of the world market in one commodity relative to its share of all traded goods. The Balassa method is static in nature and thus does not take into account changes in RCA over time. Furthermore, it says nothing about how a country acquires its market share. Market share may well be maintained by costly government incentives. Nevertheless, this technique will form the basis of analysis in this study to identify optimal collaboration opportunities for strategic partnerships.

CHAPTER FOUR

APPLICATION AND THE RESULTS OF THE METHODOLOGY

“We, as the industry can either decide to work together and compete or we can maintain our romantic cowboy independence, fight amongst ourselves and become totally irrelevant”.

Mark Gardiner, Kansas cattleman whose family has raised cattle for over 110 years quoted in Katz and Boland (2000).

4.1 Introduction

Chapters One and Three laid the foundation for this analysis. The challenge now is to build appropriately on the foundation laid down in these preceding chapters. The objective of this chapter is thus to outline South Africa's and the Cairns Group's global trade perspectives, using the information on international statistics from the databases discussed in Chapter One. This assists in gaining an insight into the global trade patterns and perspectives of these countries.

The second part of this chapter is devoted to determining the competitive status of selected agro-food chains using Vollrath's (1991) improved index of Balassa's (1965 and 1989) original index namely the RTA method. As stated earlier, indicators based on absolute production and marketing shares give little information on the competitive position of a product, sector or subsection in an economy, and hence the use of RTA index.

4.2 Trade Perspectives

4.2.1 Exports of Agricultural Products

Table 4.1 illustrates the exports of agricultural products and their share in the economy's total exports of South Africa and other members of the Cairns Group in the period 1990 and 2001. The data show that in 1990 Canadian agricultural exports were the highest in value. This was followed by Australia and Brazil respectively. South Africa's agricultural exports only exceeded those of Chile, Colombia, Philippines, Uruguay, Costa Rica, Paraguay, Guatemala and Bolivia in the same period.

The situation in 2001 was somewhat different. Canada maintained its first position. Australia conceded second position to Brazil, with Argentina jumping from 6th position to 4th position. Chile has also seen a growth in value exported, dislodging South Africa from 9th position to 10th position. Uruguay dropped from its 13th position, giving way to the likes of Costa Rica and Guatemala. Paraguay dropped from 15th position to 16th, with Bolivia remaining in the bottom position. The data also show that there has generally been an increase in the value exported by these countries in the given periods. The opposite holds in terms of the share of these countries' agricultural exports in the economy's total exports. There has been a general decline in the share in economies' total exports, except in countries such as Bolivia, Brazil and Chile, whose agricultural exports' contribution to the economy's total exports have actually increased.

The data also show that these countries' share in their economies' total exports was well above the world average of 12.2 percent in 1990 and 9.1 percent in 2001, except in the case of South Africa, whose share of agricultural exports in the economy's total exports was equal to the world average in 1990 and just above the world average in 2001. South Africa's low share of agriculture in the economy's total exports indicates a more diversified economy than those of the other members of the Cairns Group. In contrast, agricultural export earnings are very important for countries such as Australia, Bolivia, Brazil, Chile, Costa Rica, Guatemala, New Zealand, Paraguay, Thailand and Uruguay. These reflect structural differences between the economies of the Cairns Group members. Chile and Bolivia are the only two members of the

Cairns Group where the share of agricultural exports in total exports actually grew between 1990 and 2001.

Table 4.1: Exports of agricultural products from Cairns Group Countries in 1990-2001

Country	Value In 1990	Value In 2001	Share In Economy's Total Exports 1990	Share In Economy's Total Exports 2001
Canada	22339	33574	17.5	12.9
Brazil	9779	18431	31.1	31.7
Australia	11628	16563	60.6	45.8
Argentina	7482	12199	12.2	9.1
Thailand	7786	12057	33.8	18.5
New Zealand	5966	7972	63.5	58.1
Malaysia	7495	7190	25.4	8.2
Indonesia	4154	7024	16.2	12.5
Chile	2779	6966	33.2	39.9
South Africa	2881	3109	12.2	10.6
Colombia	2514	2884	37.2	23.5
Philippines	1683	1958	20.7	6.1
Costa Rica	927	1668	64.0	33.3
Guatemala	849	1337	73.0	54.2
Uruguay	1025	1132	60.6	54.9
Paraguay	863	824	90.0	83.4
Bolivia	245	428	26.5	33.3

Source: WTO: International Trade Statistics (2002).

4.2.2 Product Groups Exported¹⁵

Tables 4.2-4.5 below (Australia, Chile, New Zealand and South Africa) and 4.1A-4.17A in appendix A (all Cairns Group members) illustrate the main product groups exported by these countries in 2001. The data provide a clear indication of the importance of each export product group in terms of its contribution to total export earnings.

In Australia the top five export product groups contributed 14.92% of the total exports of that country, compared with 20.96% for Chile, 40.98% for New Zealand and 5.51% for South Africa. Furthermore, no product group contributed more than 3% to South Africa's total exports, while in Australia meat and cereals each contribute more than 8%, in New Zealand dairy products, eggs and honey contribute more than 10%, and in Chile fruits and nuts contribute more than 4%, confirming that South Africa's total (agricultural and non-agricultural) export portfolio was far more diversified than that of its main competitors.

The top five export groups represented the following contributions to total export earnings in Argentina (4.37%), Bolivia (19.06%), Brazil (19.25%), Canada (4.22%), Colombia (14.4 %), Costa Rica (25.57%), Guatemala (41.68%), Indonesia (4.37%), Malaysia (0.92%), Paraguay (62.23%), Philippines (3.35%), Thailand (11.48%) and Uruguay (34.79%).

The data also show that there is a greater variance in terms of the concentration of the value of export product groups and the share of each export product group to total export earnings, reflecting structural differences within the respective members of the Cairns Group. Those differences indicate, among other things, differences in resource endowments and climatic conditions.

¹⁵ The analysis in this section uses aggregated commodity data, two-digit classification in terms of the Harmonised System code. According to this system, products are categorised into 24 categories. However, classification analysis using aggregated data hides much of the diversity occurring within various sub-sectors. The analysis in this section is thus illustrative of the competitiveness of various food chains in the Cairns Group members. Nonetheless, the insights derived from this aggregated analysis are useful in directing further research on competitiveness at the sub-sectoral level.

Despite these differences, it is evident from the data that certain product groups such as fish and crustaceans; meat and edible offal meat; edible fruits, nuts, peel of citrus fruit, melons; and edible vegetables and certain roots feature prominently among the exported product groups with the highest value for each member of the Cairns Group.

It is also evident that South Africa exported the third highest value of edible fruit, nuts, peel of citrus fruit, melons (\$0.55 bn), behind Chile (\$1.3 bn) and Costa Rica (\$0.73 bn) respectively. Regarding sugars and sugar confectionery, which constitute one of the most important export product groups in South Africa, South Africa exported the third highest value behind Brazil (\$2.4 bn) and Thailand (\$0.8 bn) within the Cairns Group.

Tables 4.2-4.5 and 4.1A-4.17A also indicate annual growth in export value between 1997 and 2001. These data show that Brazil topped the other members of the Cairns Group for the highest number of export product groups experiencing a positive growth (10 export product groups), with Canada occupying second place with 9 export product groups, and Australia, Chile, South Africa and Thailand in third place with 8 export product groups each. Colombia was in fourth place with 7, Malaysia, New Zealand and Philippines fifth with 6, Costa Rica second from the bottom with 4 groups and Uruguay at the bottom of the list with 2 product groups.

The data also reveal that South Africa was second to the Philippines in terms of the highest annual growth in the value of exports of meat and edible offal meat. It is also worth noting that meat and edible offal meat have experienced a positive growth in the majority of the members of the Cairns Group.

Bolivia topped the Cairns Group with regard to the combined average annual growth in exports of those product groups that have experienced positive growth, with 78% average annual growth between 1997 and 2001. Paraguay followed in second place with 38.2%, and Philippines and Colombia in third and fourth places with 33.5% and 31.9% rates of growth respectively. In fifth, sixth and seventh places were Indonesia (18.9%), Argentina (18.0%) and South Africa (14.9%). Closely behind South Africa were Brazil (14.7%), Guatemala (10.7%), Canada (9.1%), Chile (8.4%), Malaysia (8.2%), Uruguay (8.0%), Australia (6.4%), Thailand (5.4%) and Costa Rica (3.5%).

The relatively small shares of each product group in total export earnings in Indonesia, Malaysia, Philippines and South Africa reflect the fact that these countries' export portfolios are more diversified than those of the rest of the members of the Cairns Group. This is an important observation and implies that these countries are better positioned in the global arena against sudden shocks in international commodity markets than the other members of the Cairns Group. A diversified economic structure provides more effective buffers to external shocks as internal resource adjustment can mitigate the negative effects from shocks. Furthermore, research also shows that countries with the fastest growth in exports are predominantly exporters of manufactured goods (Trade and Development Centre, 2004).

The analysis also shows that South Africa managed to surpass all other members of the Cairns Group, with the exception of Chile, Philippines and Bolivia whose top five export products were dominated by high-value products relative to South Africa in terms of the movement up the value chain in agricultural exports. This implies that these countries are better positioned in the global arena than the other members of the Cairns Group particularly in view of the findings of Prebisch (1950) and Singer (1950).¹⁶ The structure and content of commodity trade is not the same as it once was. Good potential exists for example in horticultural products, fruits, vegetables and other foodstuffs. As explained in Chapter one these products have a higher income elasticity than basic commodities and hence, the importance of diversification.

¹⁶ For information regarding the findings of Prebisch (1950) and Singer (1950) refer to Chapter One, p.8.

Table 4.2: Product Group Exported by Australia in 2001.

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Cumulative contribution to exports (%)	Ranking in World Exports
	All products	63,330,032						
02	Meat and edible offal meat	3240,677	7	0	8.1	5.12	5.12	4
10	Cereals	2736,138	-8	-5	8.2	4.3	9.42	4
04	Dairy products, eggs, honey	1566,768	5	0	5.2	2.47	11.89	6
22	Beverages, spirits; vinegar	1100,540	17	1	2.9	1.74	13.63	9
03	Fish and crustaceans	819,804	3	2	2.0	1.29	14.92	19

Source: TIPS (2003).

Table 4.3: Product Group Exported by Chile in 2001.

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value Of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Cumulative contribution to exports (%)	Ranking in World Exports
	All products	18,745,408						
03	Fish and crustaceans	1409,842	10	2	3.4	7.52	7.52	9
08	Edible Fruits, nuts, peel of citrus fruit, melons	1277,396	5	-2	4.5	6.81	14.33	6
22	Beverages, spirits; vinegar	663,035	9	1	1.8	3.54	17.87	14
23	Residues, wastes of food industry, animal fodder	324,687	-14	-3	1.5	1.73	19.6	13
20	Vegetable, Fruit, nut, etc food preparations	255,207	-1	0	1.3	1.36	20.96	19

Source: TIPS (2003).

Table 4.4: Product Group Exported by New Zealand in 2001.

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Cumulative contribution to exports (%)	Ranking in World Exports
	All products	15,388,528						
04	Dairy products, eggs, honey	3170,732	6	0	10.5	20.60	20.60	4
02	Meat and edible offal meat	1787,878	0	0	4.4	11.62	32.22	10
03	Fish and crustaceans	714,755	1	2	1.7	4.64	36.86	20
08	Edible Fruits, nuts, peel of citrus fruit, melons	407,680	-4	-2	1.4	2.65	39.51	21
22	Beverages, spirits; vinegar	226,353	26	1	0.6	1.47	40.98	20

Source: TIPS (2003).

Table 4.5: Product Group Exported by South Africa in 2001.

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share In World Exports	Contribution to the total Exports	Cumulative contribution to exports (%)	Ranking in World Exports
	All products	34,016,368						
08	Edible Fruits, nuts, peel of citrus fruit, melons	549,188	-2	-2	1.9	1.61	1.61	12
17	Sugars and Sugar confectionery	446,201	7	-5	2.9	1.31	2.92	10
22	Beverages, spirits and vinegar	406,602	5	1	1.1	1.19	4.11	17
03	Fish and crustaceans	271,235	7	2	0.6	0.79	4.9	36
20	Vegetable, Fruit, nut, etc food preparations	207,999	-7	0	1.0	0.61	5.51	22
23	Residues, wastes of food industry, animal fodder	17,255	13	-3	0.1	0.05	5.56	57

Source: TIPS (2003).

4.2.3 Trade Performance on Category levels

Figures 4.1B-4.17B in Appendix B represent the structures¹⁷ of South Africa's and other members of the Cairns Group's agricultural exports over the period 1993 to 2001. Although these figures represent the structures of these countries' agricultural exports, their trade performance at category levels can also be deduced from these figures on the basis of the magnitude or volumes that these countries exported over the period 1993 to 2001.

In comparison with the other members of the Cairns Group, South Africa, Argentina, Bolivia, Chile, Malaysia and Philippines' agricultural export structures were dominated by high-value agricultural products. A glance at these data shows that Chile has the greatest average percentage exports of high value products (75%), followed by Philippines with an average of 58%, Bolivia with an average of 51%, South Africa with an average of 47%, Malaysia with an average of 46% and Argentina with an average of 39% of total agricultural exports.

Vink *et al.* (2002) concluded that exports of processed foods and beverages have shown strong growth in the post-apartheid and liberalisation era. Indeed the export value of certain processed food and beverages such as sugar, wine, non-alcoholic beverages, butter, chocolate products, fresh fruit, fruit juice, fresh vegetables, frozen vegetables and prepared vegetables has increased or grown tremendously, but at the same time a number of processed foods have actually experienced decreases in the value exported. These include milk products, cake of cottonseed, cake of groundnuts, cake of linseed, cake of maize, cake of soybeans, cake of sunflower seed, raisins, spices and feeding stuffs. However, these represent a smaller share of exports than the former group. In addition, South Africa's field crop production is relatively unstable, as shown in Figure 4.15B, thus the share of high value exports fluctuates from year to year. These results also show a flaw with working with averages, as changes in amounts of one category (bulk products) are automatically accounted for by changes in another category (intermediate or high value products) as a consequence a misrepresentation of the prevailing situation may occur, as is the case with Figure 4.15B. Despite this, the share has increased from below 40% in 1994 to above 40% in 2001.

¹⁷ The structures of the agricultural exports of South Africa and other members of the Cairns Group were calculated using data from the FAO and included only agricultural products in the FAO domain of Agriculture and Food Trade. Thus these structures excluded fish and fish products, since fish and fish products are not included in the domain Agriculture and Food Trade.

Despite the fact that the proportion of exports of high value products in Chile peaked in 1999 at 79%, it has remained relatively constant throughout the entire period at 73%. The increase in the proportion of exports of high-value products in Argentina, Bolivia and Philippines can be attributed to a significant decline in the percentage of intermediate products in Argentina, and bulk and intermediate products in Bolivia and the Philippines. The decline in the percentage exports of high-value products is explained by the significant increase in the percentage exports of bulk products and intermediate products in Malaysia.

The figures in appendix B also show that bulk products continued to dominate the percentage share of agricultural exports in countries such as Brazil, Colombia, Costa Rica, Guatemala, Indonesia, Paraguay and Thailand relative to the other members of the Cairns Group. In fact, Guatemala had the greatest percentage exports of bulk products, averaging 87%, followed by Thailand with an average of 85%, Costa Rica and Thailand with an average of 59%, Indonesia with an average of 56%, Paraguay with an average of 51% and Brazil with an average of 41% of total agricultural exports. It is also evident that the percentage share of bulk exports has generally declined in Colombia, Indonesia and Thailand, while countries such as Brazil, Costa Rica, Guatemala and Paraguay have experienced an increase in the percentage exports of bulk products.

The growing importance of intermediate and high-value products in Colombia, Indonesia and Thailand has driven these declines. The declining percentage of exports of intermediate products in Costa Rica and Guatemala and the declining percentage of exports of intermediate and high-value products in Paraguay, on the other hand, has driven the increase in the percentage exports of bulk products in these countries.

When compared to other members of the Cairns Group, intermediate products dominated the structure of Australia, Canada, New Zealand and Uruguay's agricultural exports. Uruguay has the greatest percentage of exports of intermediate products (66%), followed by New Zealand (61%), Australia (55%) and Canada (45%). The graphs for Australia, Canada, New Zealand and Uruguay show clearly that the percentage exports of intermediate products has actually increased in Canada, while the opposite is true in the case of Australia, New Zealand and Uruguay. This increase in the proportion of exports of intermediate products in Canada can be

attributed to the declining percentages of bulk products and high-value products, while the decrease in Australia, New Zealand and Uruguay is accounted for by an increase in the percentage and importance of high-value products.

Between 1993 and 2001 the proportion of high-value exports rose from 14% to 25% in Australia, and from 32% to 43% in New Zealand, while it declined from 22% to 18% in Canada.

This analysis concurs with the findings in section 4.2.2. It is evident that South Africa managed to surpass all other members of the Cairns Group, except for Chile, Philippines and Bolivia, whose export structures are dominated by high-value products relative to South Africa in terms of the movement up the value chain in agricultural exports. This is the case despite the fact that countries such as Argentina, Australia, Brazil, Colombia, Costa Rica, Fiji, Indonesia, New Zealand, Thailand and Uruguay have managed to increase their percentage export value of high-value agricultural products at a faster rate than that of South Africa.

The analysis above shows clearly that there are lessons to be learned by the Cairns Group members from each other, especially from Chile and the Philippines, if significant strides are to be made with regard to the movement up the value chain. Chile and the Philippines are the only countries in the Cairns Group which proportionally exceeded South Africa's exports of high value agricultural products by significant margins.

In Chile the success of high value agricultural exports was based on world market demand. This success arises from a series of reforms moving the country away from the initial import substitution industrialisation model. Internally, this export promotion strategy implied the following policies (Anonymous, 2004): a competitive exchange rate policy, reducing import duties unilaterally, streamlining export procedures, supporting a large number of export promotion institutions and opening up the economy to foreign direct investment. Externally, the strategy was based on very attractive trade diplomacy and numerous trade agreements.

The government of Chile initiated an Export Promotion Fund for agricultural promotion in 1995 to assist agricultural groups to develop either new markets for traditional products or to

promote new-to-market products. During 1997 direct government support to export promotion was estimated at \$9.9 million, while private sector contributions to the Export Promotion Fund and to the Chilean Exporters Association were estimated at \$7.2 million (FAS, 1997). Another device Chile used to encourage exports by small and medium sized companies is a simplified duty drawback system designed to refund duties paid on imported inputs without creating an excessive documentation burden. Non-traditional products with total export value under \$21 million were given a refund of between three and ten percent of the Free On Board (FOB) value of their exported merchandise.

The Philippines recognised the adverse of anti-trade and protectionist regime as social and economic unrest grew towards the end of the 1970s. This prompted the government to undertake major reforms beginning in the 1980s. The past two decades have witnessed the unilateral implementation of substantial industrial reforms through trade and investment. This was complemented by reforms in the services and agricultural sector through liberalization, deregulation and privatization (Austria, 2001). These reforms were aimed at improving efficiency and resource allocation and attaining global competitiveness and sustained economic growth.

In the same vein, the Philippines pursued a series of Tariff Reform Programs (TRP) since 1981 with the objective of reducing the overall level of protection and dispersion of tariff protection within and across sectors and industries. The first phase was implemented in 1981-1985 where tariff rates were reduced from a peak of 100 percent to a maximum of 50 percent. The average nominal tariff fell from 42 percent in 1981 to 28 percent at the end of the first phase (Austria, 2001). The Tariff Reform Program was temporarily placed on hold during the second half of the 1980s because of the political and balance of payments crisis. During this period, however, the country implemented the Import Liberalisation Program (ILP) designed to gradually remove non-tariff restrictions on imports, mainly import licensing requirements or outright import bans.

The current round of tariff reform (TRP Phase II, 1996-2003) aims at a uniform tariff rate of 5 percent by 2004. To achieve this, a series of Executive Orders (EO) were issued to gradually restructure the economy (Austria, 2001). Since 1996, tariff rates are clustered at 3 percent.

The main lessons of the Chilean experience is that agricultural based growth in exports (in particular of high value agricultural products) is possible and has been achieved by focusing on comparative advantage combined with foreign investment or partnerships, subsidies, tax exemptions, duty drawback schemes, publicly provided market research and public initiatives fostering scientific expertise.

The lessons to be learned from the Philippines' trade policy reform is that agricultural based growth exports is possible but a gradual process. This should inform and encourage other members of the Cairns Group who have already embarked on trade policy reform, and who expect quick results from their trade policy reforms. The country's experience points to the importance of domestic policies that foster domestic efficiency and competitiveness before one can participate in regional and multilateral integration and face global competition. The unilateral efforts resulted in a better allocation of resources and improvement in the overall competitiveness of the domestic industries and the movement up the value chain in agricultural food chains.

4.3 Competitive Advantage¹⁸

4.3.1 Competitiveness of Selected Agro-Food Chains

Tables 4.6 and 4.7 below and appendix 4.1C-4.9C show the competitive advantage of selected food chains in South Africa and other members of the Cairns Group and their trends between 1995 and 2000 based on the RTA Index. The results of Tables 4.6-4.7 and 4.1C-4.9C were calculated from 16 supply chains and 52 industries and are discussed below. Tables 4.6-4.7 and appendix 4.1C-4.9C show that the food chains in South Africa, Costa Rica, Paraguay and Thailand are generally marginally competitive, whilst the food chains in Canada, Chile, Colombia, Indonesia and Uruguay are only just marginally competitive as many of their RTA values are situated around zero. The food chains in Guatemala, Malaysia, New Zealand and Philippines are internationally uncompetitive. The food chains in Argentina, Australia and Brazil are internationally competitive.

¹⁸ The RTA index serves as a measurement of the agro-food chains' competitiveness in terms of their abilities to trade sustainable and successfully at competitive prices in the global arena. For a detailed description of the RTA index refer to Chapter Three, p.31-35.

The competitiveness and trends within added value processes are given below.¹⁹ In South Africa the maize, sugar, groundnuts, orange and grape chains are internationally competitive, while the competitiveness of all other chains is either decreasing or constant from primary to processed products.

In Australia the wheat, sugar, cotton, beef, mutton, milk and orange are internationally competitive, while the competitiveness of all other chains is either decreasing or constant from primary to processed products.

The mutton, pork and grape chains in Chile are internationally competitive, while the competitiveness of all other chains is either decreasing or constant from primary to processed products.

In the case of New Zealand, the maize, cotton, beef, mutton, milk and grape chains are internationally competitive, while the competitiveness of all other chains decreases from primary to processed products.

The analysis shows that there is a general tendency in South Africa and other members of the Cairns Group's food chains to decrease in competitiveness, when moving from the primary to processed products. This implies that value-adding opportunities in these countries' agricultural sectors are constrained. In the case of South Africa this has been attributed to high input costs combined with low productivity, poor business strategies and inefficiencies, and unfair trade practices by the country's competitors (NDA, 2001).

Figure 4.19 depicts the latter factor contributing to uncompetitive value added activities in these countries. It clearly shows that average tariff rates for semi- and fully processed agricultural products in industrialised countries are higher than for unprocessed agricultural products. This would explain why most developing countries export commodities rather than

¹⁹ Only the most significant members of the Cairns Group (in particular, their competitiveness and trends within added value processes) that are in direct competition with South Africa are discussed. For details on competitiveness and trends within value added processes for all the members of the Cairns Group refer to Tables 4.1C-4.9C in the appendix.

higher value products and ultimately, why competitiveness decreases when moving from primary to the processed product amongst the Cairns Group members. Tariff escalation constrains these countries' development, as export opportunities are negatively affected and imports of semi-finished goods for processing become more expensive. This regrettable, but real fact is, ironically, in contradiction with the developed countries' development policy for structural transformation in developing countries that the developing world should move away from low demand growth products to finished products.

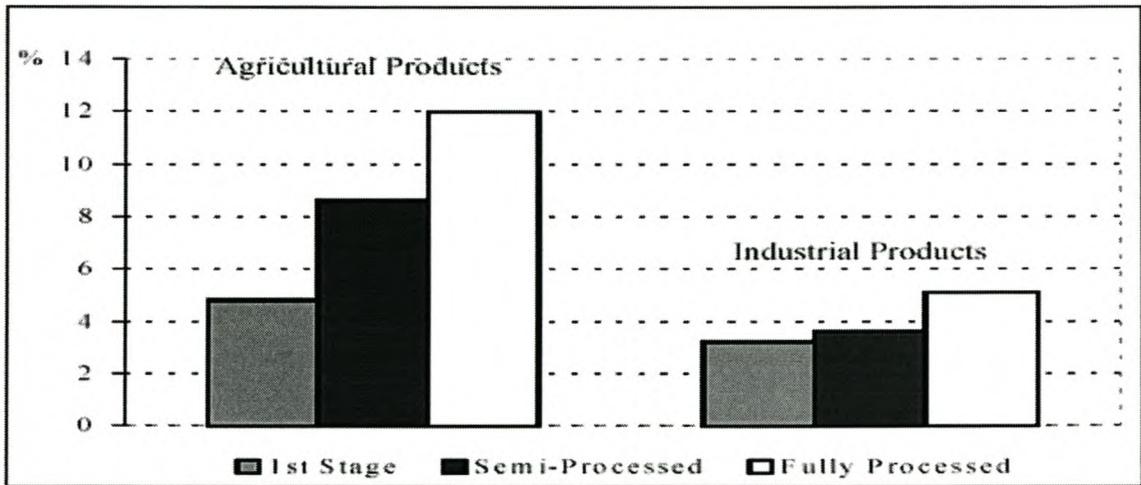


Figure 4.1: Tariff escalation in industrialised countries.

Source: World Bank (2002c).

Note: Tariff rates (in %) refer to unweighted averages for the period 1994-2000.

Table 4.6: Competitive advantage of selected food chains in Argentina and Australia based on the Relative Revealed Trade Advantage (RTA) index.

Stellenbosch University <http://scholar.sun.ac.za>

Chain	Product	Australian RTA 2000	Australian Trend 1995-2000	Chilean RTA 2000	Chilean Trend 1995-2000
Wheat	Wheat	20.77	+	-1.48	+
	Flour of Wheat	2.80	+	-0.20	-
	Macaroni	-1.29	+	-0.45	-
	Pastry	-0.96	+	-0.04	-
	Bread	-0.18	+	-0.06	-
	Breakfast Cereals	1.08	+	-0.42	-
Maize	Maize	0.10	+	-2.002	-
	Flour of Maize	-0.40	+	-0.37	-
Sugar	Sugar (Centrifugal, Raw)	26.21	+	0.005	+
	Sugar refined	1.30	+	-4.21	-
	Sugar Confectionery	n/a	n/a	-0.28	-
	Maple sugar and syrups	-3.11	+	-0.02	n/a
Soybeans	Soybean	0.03	+	-0.47	+
	Oil of soya beans	-0.05	=	-1.28	+
	Cake of soya beans	-0.08	=	-3.82	=
	Soya Sauce	-4.41	=	-0.62	-
Groundnut	Groundnuts in shell	0.01	-	-0.14	-
	Groundnuts Unshelled	-0.37	-	-1.55	-
	Groundnut oil	-0.24	-	-0.002	-
	Prepared Groundnuts	-0.29	+	n/a	n/a
Cotton	Cotton seed	59.42	-	-1.58	-
	Oil of cotton seed	0.19	-	-0.05	-
	Cake of Cotton seed	32.51	-	-1.59	-
	Cotton lint	16.34	-	-.096	-
	Cotton linter	-0.17	-	-0.04	=
Beef	Meat Bovine Fresh	17.43	-	-4.11	-
	Beef and Veal	2.89	+	0.001	=
Mutton	Meat sheep fresh	34.65	+	1.20	-
	Mutton and lamb	33.76	+	1.25	-
Pork	Pig meat	0.20	-	1.07	-
	Bacon-ham	0.04	+	-0.13	+
Milk	Cow Milk (whole, fresh)	1.81	+	0.02	-
	Butter from cow milk	7.09	+	-0.39	-
	Cheese	-1.21	+	-0.50	-
Sunflower	Sunflower seed	0.72	-	5.08	+
	Sunflower oil	-0.08	-	-3.23	+
	Sunflower cake	0.09	-	-5.448	-
Tomatoes	Tomatoes	0.12	-	0.43	+

	Tomato juice	n/a	n/a	n/a	n/a
	Tomato Paste	-0.74		19.49	-
	Peeled Tomatoes	-3.36	-	0.87	-
Orange	Oranges	4.76	+	0.27	+
	Orange juice	n/a	n/a	n/a	n/a
Grape	Grapes	-0.96	=	87.99	+
	Grape juice	0.44	-	7.27	+
	Wine	-1	n/a	16.26	+
Coffee	Coffee	-0.65	+	-0.64	-
	Roasted Coffee	-1.21	-	-0.13	=
	Coffee extract	-2.31	=	0.27	-
Tobacco	Tobacco	-0.45	-	0.04	-
	Tobacco leaves	-0.61	-	-0.21	-
	Tobacco products	-0.35	-	0.97	+

Source: Own calculations based on data from FAOSTAT 2002.

Note: “+” Positive trend, “-” negative trend and “=” constant trend

Table 4.7: Competitive advantage of selected food chains in New Zealand and Paraguay based on the Relative Revealed Trade Advantage (RTA) index.

Stellenbosch University <http://scholar.sun.ac.za>

Chain	Product	New Zealand's RTA 2000	New Zealand's Trend 1995-2000	South African RTA 2000	South African Trend 1995-2000
Wheat	Wheat	-1.22	-	-0.89	-
	Flour of Wheat	-0.50	+	2.05	+
	Macaroni	-16.19	-	-0.50	-
	Pastry	-1.99	=	-0.07	-
	Bread	-0.69	=	-0.22	-
	Breakfast Cereals	-2.27	+	-0.10	+
Maize	Maize	-0.03	+	1.13	+
	Flour of Maize	2.83	-	5.35	-
Sugar	Sugar (Centrifugal, Raw)	-4.43	-		
	Sugar refined	-0.14	+	1.18	-
	Sugar Confectionery	-1.69	+	4.95	+
	Maple sugar and syrups	-0.59	+	0.57	+
				-0.04	=
Soybeans	Soybean	-0.009	+	-0.37	=
	Oil of soya beans	-1.400	-	-0.25	=
	Cake of soya beans	-0.69	+	-1.91	+
	Soya Sauce	-3.75	-	-0.20	=
Groundnut	Groundnuts in shell	-0.56	-	17.02	+
	Groundnuts Unshelled	-2.09	+	2.58	+
	Groundnut oil	-0.34	=	3.60	=
	Prepared Groundnuts	-5.97	-	0.65	=
Cotton	Cotton seed	-0.76	+	-5.51	=
	Oil of cotton seed	-1.44	+	0.39	+
	Cake of Cotton seed	n/a	n/a	-12.35	=
	Cotton lint	-0.003	-	-0.78	=
	Cotton linter	-0.04	-	0.50	+
Beef	Meat Bovine Fresh	25.11	+	0.27	=
	Beef and Veal	3.53	+	0.26	=
Mutton	Meat sheep fresh	360.51	+	-1.93	-
	Mutton and lamb	374.16	+	-1.99	-
Pork	Pig meat	-0.95	+	-0.76	=
	Bacon-ham	-0.001	-	-0.001	=
Milk	Cow Milk (whole, fresh)	5.57	+		
	Butter from cow milk	130.45	+	0.45	=
	Cheese	27.05	+	-0.48	=
				-0.14	=
Sunflower	Sunflower seed	-0.21	+	0.13	=
	Sunflower oil	-0.21	+	-3.98	-

	Sunflower cake	n/a	n/a	-3.33	-
Tomatoes	Tomatoes	-0.37	=	0.10	=
	Tomato juice	n/a	n/a	-0.04	=
	Tomato Paste	-2.86	-	-0.10	=
	Peeled Tomatoes	-3.03	-	-0.60	=
Orange	Oranges	-1.73	-	17.43	=
	Orange juice	n/a	n/a	1.61	+
Grape	Grapes	-1.83	=	14.12	=
	Grape juice	0.0004	-	7.65	+
	Wine	1.46	+	4.02	+
Coffee	Coffee	-0.42	=	-0.51	=
	Roasted Coffee	-2.48	-	-0.27	=
	Coffee extract	-3.80	-	-0.06	=
Tobacco	Tobacco	-0.35	-	0.56	n/a
	Tobacco leaves	-0.82	+	-0.15	-
	Tobacco products	0.06	+	-0.03	=

Source: Esterhuizen and others (2001) and own calculations based on data from FAOSTAT 2002.

4.4 CONCLUDING REMARKS

The first part of this Chapter presented South Africa's and the Cairns Group's global trade perspectives, using data from the WTO, TIPS and the FAO. The analyses generally show that there has been an increase in the value of agricultural exports of South Africa and other members of the Cairns Group. The analyses on product levels and as well as on aggregated levels (i.e., agricultural exports) corresponds, with countries such as Australia, Canada, Brazil, Thailand, Malaysia, New Zealand and Indonesia leading the group and countries such South Africa, Chile, Colombia, Philippines, Uruguay, Costa Rica, Paraguay and Guatemala lagging behind in terms of product groups with the greatest export value in 2001.

It is evident that South Africa managed to surpass all other members of the Cairns Group, except for Chile, Philippines and Bolivia, whose export structures are highly dominated by high-value products relative to South Africa in terms of the movement up the value chain in agricultural exports. The analyses also reveals that competitiveness decreases in all these countries when moving from primary to processed products in the agro-food chains which implies that value-adding opportunities are limited.

With regard to the share in the economy's total exports of South Africa and other members of the Cairns Group, the analysis reveals that agricultural exports were above the world percentage of 12.2 percent in 1990 and 9.1 percent in 2001, except in the case of South Africa whose share of agricultural exports in the economy's total exports was equal to the world average in 1990 and just above the world average in 2001. The analysis in section 4.2.3 points to the fact that these countries have a great deal to learn from each other, especially from Chile and the Philippines which managed to surpass all the member of the Cairns Group with regard to the movement up the value chain.

The second part of this chapter determined the competitive status of selected agricultural food chains in South Africa and other members of the Cairns Group using the RTA Index. The results of the RTA Index clearly show that the food chains in Costa Rica, Paraguay, Thailand and South

Africa are generally marginally competitive, whilst the food chains in Canada, Chile, Colombia, Indonesia and Uruguay are only just marginally competitive as many of their RTA values are situated around zero. The food chains in Guatemala, Malaysia, New Zealand and the Philippines are internationally uncompetitive. The food chains in Argentina are highly competitive. A further discussion of the results presented in this chapter is given in the next (final) chapter.

CHAPTER FIVE

CONCLUSIONS

5.1 Introduction

The objective of the analysis undertaken in Chapter Four was to find answers to the sub-questions identified in Chapter One. The following sub-questions were identified:

- What are the magnitudes in value of South Africa and the Cairns Group's agricultural export levels in global terms?
- What are the magnitudes in value of South Africa and the Cairns Group's agricultural exports at product level in global terms?
- What are the growth patterns of South Africa and the Cairns Group's agricultural exports over the period 1997-2001?
- What are the magnitudes of South Africa and the Cairns Group's agricultural exports at category level in global terms?
- What is South Africa and the Cairns Group's competitive status with respect to selected agricultural exports in global terms?

The objective of this chapter is therefore to answer the sub-questions posed in Chapter One with evidence presented from Chapter Four.

5.2 Concluding the sub-questions

The evidence in Chapter Four concluding each sub-problem is summarised below.

5.2.1 What are the magnitudes in value of South Africa and the Cairns Group's agricultural exports?

South Africa's agricultural exports were found to be higher relative to some (not all) members of the Cairns Group. The analyses show that in 1990 South Africa exported more agricultural products than Chile, Colombia, the Philippines, Uruguay, Costa Rica, Paraguay, Guatemala and Bolivia, while Canada, Australia, Brazil, Thailand, Malaysia, Argentina, New Zealand and Indonesia exceeded South Africa's agricultural exports in value in the same period. The situation was somewhat different in 2001. By this time Chile's agricultural exports had also grown larger than South Africa's.

5.2.2 What are the magnitudes in value of South Africa and the Cairns Group's agricultural export at product level in global terms?

The analyses of South Africa and other members of the Cairns Group's agricultural exports on product level in value terms corresponds to the above findings (5.2.1), with countries such as Australia, Canada, Brazil, Thailand, Malaysia, New Zealand and Indonesia leading the Group in terms of product groups with the highest export value in 2001. South Africa's agricultural exports on product level in value terms were still higher than those of Chile, Colombia, Philippines, Uruguay, Costa Rica, Paraguay, Guatemala and Bolivia.

5.2.3 What are the growth patterns of South Africa and the Cairns Group's agricultural exports over the period 1997-2001?

It was established that South Africa's annual average agricultural export growth (14.9%) was faster than that of Brazil (14.7%), Guatemala (10.7%), Canada (9.1%), Chile (8.4%), Malaysia (8.2%), Uruguay (8.0%), Australia (6.4%), Thailand (5.4%) and Costa Rica (3.5%) over the period 1997-2001. However, Bolivia with an average annual growth rate of agricultural exports of 78%, Paraguay (38.2%), Philippines (33.5%), Colombia (31.9%) and Argentina (18.0%) experienced the fastest average annual growth rate relative to South Africa over the same period. Despite these developments South Africa came second to the Philippines in terms of the highest annual growth value in meat and edible offal meat. Another encouraging fact is that South Africa together with Chile and Thailand came third to Brazil and Canada for the highest number of export product groups experiencing a positive growth relative to other members of the Cairns Group.

5.2.4 What are the magnitudes of South Africa and the Cairns Group's agricultural exports on category level in global terms?

The analysis revealed that on category levels countries such as Brazil, Colombia, Costa Rica, Guatemala, Indonesia, Paraguay and Thailand exported the greatest percentage of bulk products relative to other members of the Cairns group over the period 1993 to 2001, while countries such as Australia, Canada, New Zealand and Uruguay exported the greatest percentage of intermediate products relative to other members of the Cairns Group in the same period. Countries such South Africa, Argentina, Bolivia, Chile, Malaysia and the Philippines exported the greatest percentage of high-value products relative to other members of the Cairns group. To be precise, South Africa exported the fourth highest percentage of high-value products behind Chile, the Philippines and Bolivia.

5.2.5 What is South Africa and the Cairns Group's competitive status with respect to the selected agricultural exports in global terms?

The results of the RTA Index analysis clearly show that the food chains in South Africa, Costa Rica, Paraguay and Thailand are generally marginally competitive relative to the rest of the members of the Group, while the food chains in Canada, Chile, Colombia, Indonesia and Uruguay are only just marginally competitive as many of their RTA values are situated around zero. The food chains in Guatemala, Malaysia, New Zealand and the Philippines are internationally uncompetitive. The food chains in Argentina, Australia and Brazil are internationally competitive relative to South Africa and the rest of the members of the Cairns Group. Despite South Africa's marginal competitiveness, most of her food chains are experiencing increasing competitiveness and the same is true for many other members of the Cairns Group.

5.3 Conclusions

The preceding discussion of the sub-problems has set the scene for the conclusion to the study. In conclusion, the results show that South Africa managed to surpass all other members of the Cairns group except for Chile, the Philippines and Bolivia, whose export structures are highly dominated by high-value products relative to South Africa in terms of the movement up the value chain in agricultural exports. This is the case despite the fact that countries such as Argentina, Australia, Brazil, Colombia, Costa Rica, Indonesia, New Zealand, Thailand and Uruguay have managed to increase their percentage export value of high-value agricultural products. Another important observation is the fact that in all these countries value-adding opportunities are limited or constrained.

These conclusions clearly indicate the need for competitive strategies to be adopted by all the participants in order to improve the competitiveness of the South African agricultural sector, particularly when considering the changes that have occurred in the sector in the last decade. With consumer concerns about food quality and safety, the environment and animal welfare, and

supply chains likely to play important roles in shaping the future of agricultural trade, it is necessary that appropriate adjustments be made in the agricultural sector in South Africa in order to ensure the long-term survival of this sector. It is indeed no longer good enough for farmers to be able to compete at farm-gate level, while value-adding activities (processes) are not competitive internationally, nor is it wise to increase agricultural production without due consideration to what the market demands. The rules of the game have changed to such an extent that the consumer now rules and he or she is now dictating terms, not the other way round. These developments require a change from a producer focus to a consumer focus.

The agricultural community can only survive if it can add so much value to its supply side and its delivery side that the market is willing to pay enough to cover the costs incurred in creating this value. In South Africa strategic alliances between farmers and other related or supporting firms are seen as crucial for farmers' financial survival and growth (Van Zyl, 2000). The basic strategic question for South African agribusiness is thus how it can adopt a position in the value-added system so that at least in the long run its value added is higher than costs. An important issue in this context is the question of the core competencies of an enterprise, that is the bundle of skills and technologies a company is really good at. Depending on core competencies, South African agribusinesses should choose the external parties they wish to deal with, take the decision to enter into Agrifood Value-Adding Partnerships (AVAP) and make the choice of a particular AVAP.

In the light of all the above arguments and statements, the future success of the South African agricultural sector ultimately depends on the ability to respond positively and in time to global forces impacting on food trade. A positive synergy between factor conditions, demand conditions, related and supporting industries, role that government plays and the ability to form AVAPs will thus be crucial in this regard.

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Appendix A.

Product Groups Exported.

Appendix 4.1A: Product Group Exported by Argentina in 2001.

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All Products	26,610,048					
02	Meat and edible offal meat	221,601	-22	0	0.6	0.83	22
03	Fish and crustaceans	934,730	-1	2	2.2	3.51	17
04	Dairy products, eggs, honey	355,560	-2	0	1.2	1.34	15
07	Edible vegetables and certain roots	234,092	-15	1	1.1	0.88	17
08	Edible Fruits, nuts, peel of citrus fruit, melons	536,263	-1	-2	1.9	2.02	13
09	Coffee, tea, mate and spices	66,909	-6	-12	0.6	0.25	96
10	Cereals	2442,077	-6	-5	7.3	9.18	5
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	1398,665	32	-2	6.9	5.26	4
16	Meat, Fish and sea food food preparations nes	150,067	-18	0	0.9	0.56	24
17	Sugars and Sugar confectionery	119,359	-2	-5	0.8	0.45	25
20	Vegetable, Fruit, nut, etc food preparations	323,387	-4	0	1.6	1.22	14
22	Beverages, spirits and vinegar	209,123	0	1	0.6	0.79	21
23	Residues, wastes of food industry, animal fodder	2626,593	4	-3	12.5	9.87	2
24	Tobacco and manufactured tobacco substitutes	169,800	-5	-5	0.8	0.64	22

Source: TIPS (2003).

Appendix 4.2A: Product Group Exported by Australia in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	63,330,032					
02	Meat and edible offal meat	3,240,677	7	0	8.1	5.12	4
03	Fish and crustaceans	819,804	3	2	2.0	1.29	19
04	Dairy products, eggs, honey	1566,768	5	0	5.2	2.47	6
07	Edible vegetables and certain roots	403,441	5	1	1.8	0.64	10
08	Edible Fruits, nuts, peel of citrus fruit, melons	310,573	0	-2	1.1	0.49	27
09	Coffee, tea, mate and spices	18,543	-3	-12	0.2	0.03	58
10	Cereals	2736,138	-8	-5	8.2	4.3	4
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	647,872	21	-2	3.2	10.23	8
16	Meat, Fish and sea food food preparations nes	104,120	-3	0	0.7	0.16	3.0
17	Sugars and Sugar confectionery	96,898	-38	-5	0.6	0.15	31
20	Vegetable, Fruit, nut, etc food preparations	129,326	-3	0	0.7	0.20	26
22	Beverages, spirits and vinegar	1100,540	17	1	2.9	1.74	9
23	Residues, wastes of food industry, animal fodder	270,133	-2	-3	1.3	0.43	15
24	Tobacco and manufactured tobacco substitutes	36,810	7	-5	0.2	0.06	50

Source: TIPS (2003).

Appendix 4.3A: Product Group Exported by Bolivia in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	1,351,235					
02	Meat and edible offal meat	842	-38	0	0.0	0.06	86
03	Fish and crustaceans	35	-35	2	0.0	0.002	199
04	Dairy products, eggs, honey	7,475	65	0	0.0	0.55	69
07	Edible vegetables and certain roots	6,746	-7	1	0.0	0.49	86
08	Edible Fruits, nuts, peel of citrus fruit, melons	28,471	-1	-2	0.1	2.11	65
09	Coffee, tea, mate and spices	5,923	-28	-12	0.0	0.44	85
10	Cereals	3,918	6	-5	0.0	0.29	65
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	16,920	-24	-2	0.1	1.25	58
16	Meat, Fish and sea food food preparations nes	352	227	0	0.0	0.03	113
17	Sugars and Sugar confectionery	10,079	-24	-5	0.1	0.75	77
20	Vegetable, Fruit, nut, etc food preparations	3,417	-32	0	0.0	0.25	94
22	Beverages, spirits and vinegar	7,523	-2	1	0.0	0.56	86
23	Residues, wastes of food industry, animal fodder	194,432	14	-3	0.9	14.39	19
24	Tobacco and manufactured tobacco substitutes	1,680	-19	-5	0.0	0.12	107

Source: TIPS (2003).

Appendix 4.4A: Product Group Exported by Brazil in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the Total Exports	Ranking in World Exports
	All products	58,222,640					
02	Meat and edible offal meat	2552,736	17	0	6.3	4.38	7
03	Fish and crustaceans	270,908	29	2	0.6	0.47	37
04	Dairy products, eggs, honey	42,778	17	0	0.1	0.07	43
07	Edible vegetables and certain roots	18,951	17	1	0.1	0.03	65
08	Edible Fruits, nuts, peel of citrus fruit, melons	346,456	5	-2	1.2	0.60	23
09	Coffee, tea, mate and spices	1339,942	-17	-12	11.3	2.30	1
10	Cereals	510,531	56	-5	1.5	0.88	11
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	2756,827	2	-2	13.7	4.73	2
16	Meat, Fish and sea food food preparations nes	348,168	3	0	2.2	0.60	11
17	Sugars and Sugar confectionery	2401,061	1	-5	15.5	4.12	1
20	Vegetable, Fruit, nut, etc food preparations	924,855	-5	0	4.7	1.59	9
22	Beverages, spirits and vinegar	149,555	1	1	0.4	0.26	2.4
23	Residues, wastes of food industry, animal fodder	2165,308	-6	-3	10.3	3.72	3
24	Tobacco and manufactured tobacco substitutes	944,316	-16	-5	4.6	1.62	5

Source: TIPS (2003).

Appendix 4.5A: Product Group Exported by Canada in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	259,902,656					
02	Meat and edible offal meat	2875,893	15	0	7.1	1.11	6
03	Fish and crustaceans	2412,380	6	2	5.8	0.93	4
04	Dairy products, eggs, honey	318,730	-2	0	1.1	0.12	17
07	Edible vegetables and certain roots	1189,452	12	1	5.4	0.46	8
08	Edible Fruits, nuts, peel of citrus fruit, melons	183,870	7	-2	0.6	0.07	32
09	Coffee, tea, mate and spices	129,007	8	-12	1.1	0.05	25
10	Cereals	3053,215	-9	-5	9.2	1.17	3
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	1439,776	-6	-2	7.2	0.55	3
16	Meat, Fish and sea food food preparations nes	556,298	9	0	3.5	0.21	2
17	Sugars and Sugar confectionery	443,132	9	-5	2.9	0.17	11
20	Vegetable, Fruit, nut, etc food preparations	709,254	13	0	3.6	0.27	10
22	Beverages, spirits and vinegar	997,070	3	1	2.7	0.38	11
23	Residues, wastes of food industry, animal fodder	511,135	-7	-3	2.4	0.20	9
24	Tobacco and manufactured tobacco substitutes	116,659	-11	-5	0.6	0.04	2

Source: TIPS (2003).

Appendix 4.6A: Product Group Exported by Chile in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value Of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	18,745,408					
02	Meat and edible offal meat	139,102	24	0	0.3	0.74	26
03	Fish and crustaceans	1409,842	10	2	3.4	7.52	9
04	Dairy products, eggs, honey	60,028	9	0	0.2	0.32	41
07	Edible vegetables and certain roots	81,094	-2	1	0.4	0.43	31
08	Edible Fruits, nuts, peel of citrus fruit, melons	1277,396	5	-2	4.5	6.81	6
09	Coffee, tea, mate and spices	25,380	-1	-12	0.2	0.14	52
10	Cereals	67,047	2	-5	0.2	0.36	35
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	119,807	-1	-2	0.6	0.64	19
16	Meat, Fish and sea food food preparations nes	239,656	2	0	1.5	1.28	16
17	Sugars and Sugar confectionery	22,391	-5	-5	0.1	0.12	65
20	Vegetable, Fruit, nut, etc food preparations	255,207	-1	0	1.3	1.36	19
22	Beverages, spirits and vinegar	663,035	9	1	1.8	3.54	14
23	Residues, wastes of food industry, animal fodder	324,687	-14	-3	1.5	1.73	13
24	Tobacco and manufactured tobacco substitutes	17,548	6	-5	0.1	0.09	69

Source: TIPS (2003).

Appendix 4.7A: Product Group Exported by Colombia in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value Of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	12,301,486					
02	Meat and edible offal meat	17,552	26	0	0.0	0.14	44
03	Fish and crustaceans	150,698	-3	2	0.4	1.23	49
04	Dairy products, eggs, honey	77,754	60	0	0.3	0.63	36
07	Edible vegetables and certain roots	34,325	38	1	0.2	0.28	48
08	Edible Fruits, nuts, peel of citrus fruit, melons	424,966	-4	-2	1.5	3.46	19
09	Coffee, tea, mate and spices	773,930	-24	-12	6.5	6.29	2
10	Cereals	311	-14	-5	0.0	0.002	99
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	2,130	-5	-2	0.0	0.02	102
16	Meat, Fish and sea food food preparations nes	24,457	-17	0	0.2	0.20	58
17	Sugars and Sugar confectionery	342,972	-1	-5	2.2	2.79	13
20	Vegetable, Fruit, nut, etc food preparations	17,742	9	0	0.1	0.14	59
22	Beverages, spirits and vinegar	19,332	6	1	0.1	0.56	65
23	Residues, wastes of food industry, animal fodder	14,842	73	-3	0.1	0.12	60
24	Tobacco and manufactured tobacco substitutes	34,324	11	-5	0.2	0.28	52

Source: TIPS (2003).

Appendix 4.8A: Product Group Exported by Costa Rica in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	4,715,789					
02	Meat and edible offal meat	30,629	1	0	0.1	0.65	38
03	Fish and crustaceans	112,356	-20	2	0.3	2.38	52
04	Dairy products, eggs, honey	21,144	7	0	0.1	0.45	52
07	Edible vegetables and certain roots	66,194	-8	1	0.3	1.40	35
08	Edible Fruits, nuts, peel of citrus fruit, melons	732,026	-3	-2	2.6	15.52	11
09	Coffee, tea, mate and spices	172,052	-22	-12	1.4	3.65	21
10	Cereals	1,969	-15	-5	0.2	0.04	42
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	17,206	-8	-2	-2	0.36	57
16	Meat, Fish and sea food food preparations nes	25,356	-12	0	0.2	0.54	57
17	Sugars and Sugar confectionery	46,172	-5	-5	0.3	0.98	49
20	Vegetable, Fruit, nut, etc food preparations	123,546	5	0	0.6	2.62	28
22	Beverages, spirits and vinegar	15,468	-1	1	0.0	0.33	68
23	Residues, wastes of food industry, animal fodder	7,020	1	-3	0.0	0.15	75
24	Tobacco and manufactured tobacco substitutes	5,242	-5	-5	0.0	0.11	91

Source: TIPS (2003).

Appendix 4.9A: Product Group Exported by Guatemala in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	2,412,559					
02	Meat and edible offal meat	4,556	13	0	0.0	0.19	71
03	Fish and crustaceans	22,630	6	2	0.1	0.94	89
04	Dairy products, eggs, honey	1,855	-17	0	0.0	0.08	89
07	Edible vegetables and certain roots	53,275	3	1	0.2	2.21	38
08	Edible Fruits, nuts, peel of citrus fruit, melons	224,346	4	-2	0.8	9.30	29
09	Coffee, tea, mate and spices	404,155	8	-12	3.4	16.75	9
10	Cereals	6,515	-26	-5	0.0	0.27	57
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	28,192	-8	-2	0.1	1.17	47
16	Meat, Fish and sea food food preparations nes	7,693	22	0	0.0	0.32	76
17	Sugars and Sugar confectionery	230,368	-8	-5	1.5	9.55	18
20	Vegetable, Fruit, nut, etc food preparations	23,185	18	0	0.1	0.96	54
22	Beverages, spirits and vinegar	28,466	11	1	0.1	1.18	56
23	Residues, wastes of food industry, animal fodder	93,353	11	-3	0.0	3.87	70
24	Tobacco and manufactured tobacco substitutes	41,462	-1	-5	0.2	1.72	47

Source: TIPS (2003).

Appendix 4.10A: Product Group Exported by Indonesia in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	56,316,864					
02	Meat and edible offal meat	18,609	3	0	0.0	0.03	42
03	Fish and crustaceans	1431,084	-2	2	3.4	2.54	8
04	Dairy products, eggs, honey	157,020	68	0	0.5	0.28	24
07	Edible vegetables and certain roots	46,066	-1	1	0.2	0.08	42
08	Edible Fruits, nuts, peel of citrus fruit, melons	104,865	4	-2	0.4	0.19	36
09	Coffee, tea, mate and spices	466,045	-14	-12	3.9	0.83	8
10	Cereals	11,592	-22	-5	0.0	0.02	51
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	34,411	2	-2	0.2	0.06	42
16	Meat, Fish and sea food food preparations nes	107,096	48	0	0.7	0.19	28
17	Sugars and Sugar confectionery	63,659	10	-5	0.4	0.11	42
20	Vegetable, Fruit, nut, etc food preparations	131,720	18	0	0.7	0.23	24
22	Beverages, spirits and vinegar	24,810	16	1	0.1	0.04	60
23	Residues, wastes of food industry, animal fodder	81,280	-12	-3	0.4	0.14	31
24	Tobacco and manufactured tobacco substitutes	274,936	1	-5	1.3	0.49	17

Source: TIPS (2003).

Appendix 4.11A: Product Group Exported by Malaysia in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value Of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	88,004,512					
02	Meat and edible offal meat	8,625	-23	0	0.0	0.009	56
03	Fish and crustaceans	264,215	5	2	0.6	0.30	38
04	Dairy products, eggs, honey	99,537	-4	0	0.3	0.11	33
07	Edible vegetables and certain roots	62,651	13	1	0.3	0.07	36
08	Edible Fruits, nuts, peel of citrus fruit, melons	99,477	4	-2	0.3	0.11	38
09	Coffee, tea, mate and spices	62,124	-11	-12	0.5	0.07	37
10	Cereals	3,732	-9	-5	0.0	0.004	67
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	12,783	-6	-2	0.1	0.01	61
16	Meat, Fish and sea food food preparations nes	91,929	-4	0	0.6	0.10	34
17	Sugars and Sugar confectionery	100,304	9	-5	0.6	0.11	29
20	Vegetable, Fruit, nut, etc food preparations	45,632	-1	0	0.2	0.05	43
22	Beverages, spirits and vinegar	130,282	12	1	0.3	0.15	29
23	Residues, wastes of food industry, animal fodder	105,822	-2	-3	0.5	0.12	26
24	Tobacco and manufactured tobacco substitutes	214,809	6	-5	1.0	0.24	20

Source: TIPS (2003).

Appendix 4.12A: Product Group Exported by New Zealand in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	15,388,528					
02	Meat and edible offal meat	1787,878	0	0	4.4	11.62	10
03	Fish and crustaceans	714,755	1	2	1.7	4.64	20
04	Dairy products, eggs, honey	3170,732	6	0	10.5	20,60	4
07	Edible vegetables and certain roots	131,312	-7	1	0.6	0.85	21
08	Edible Fruits, nuts, peel of citrus fruit, melons	407,680	-4	-2	1.4	2.65	21
09	Coffee, tea, mate and spices	358	-20	-12	0.0	0.002	130
10	Cereals	213	-49	-5	0.0	0.01	107
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	31,066	-10	-2	0.2	0.20	45
16	Meat, Fish and sea food food preparations nes	108,626	9	0	0.7	0.71	27
17	Sugars and Sugar confectionery	36,665	-8	-5	0.2	0.24	54
20	Vegetable, Fruit, nut, etc food preparations	91,896	4	0	0.5	0.60	32
22	Beverages, spirits and vinegar	226,353	26	1	0.6	1.47	20
23	Residues, wastes of food industry, animal fodder	111,120	27	-3	0.5	0.72	25
24	Tobacco and manufactured tobacco substitutes	3,125	-11	-5	0.0	0.02	97

Source: TIPS (2003).

Appendix 4.13A: Product Group Exported by Paraguay in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	990,205					
02	Meat and edible offal meat	78,531	11	0	0.2	7.93	28
03	Fish and crustaceans	70	-11	2	0.0	0.007	193
04	Dairy products, eggs, honey	404	83	0	0.0	0.04	105
07	Edible vegetables and certain roots	585	-12	1	0.0	0.05	127
08	Edible Fruits, nuts, peel of citrus fruit, melons	116	-38	-2	0.0	0.01	151
09	Coffee, tea, mate and spices	540	-27	-12	0.0	0.05	121
10	Cereals	50,750	1	-5	0.2	5.13	36
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	365,160	-10	-2	1.8	36.88	10
16	Meat, Fish and sea food food preparations nes	390	N/A	0	0.0	0.03	134
17	Sugars and Sugar confectionery	9,429	18	-5	0.1	0.95	81
20	Vegetable, Fruit, nut, etc food preparations	4,260	-13	0	0.0	0.43	90
22	Beverages, spirits and vinegar	181	-60	1	0.0	0.02	137
23	Residues, wastes of food industry, animal fodder	19,920	-27	-3	0.1	2.01	56
24	Tobacco and manufactured tobacco substitutes	101,770	78	-5	0.5	10.28	32

Source: TIPS (2003).

Appendix 4.14A: Product Group Exported by Philippines in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	32,149,872					
02	Meat and edible offal meat	184	68	0	0.0	0.0005	106
03	Fish and crustaceans	287,487	0	2	0.7	0.89	34
04	Dairy products, eggs, honey	31,750	120	0	0.1	0.10	46
07	Edible vegetables and certain roots	23,916	-4	1	0.1	0.07	57
08	Edible Fruits, nuts, peel of citrus fruit, melons	431,844	4	-2	1.5	1.34	18
09	Coffee, tea, mate and spices	624	-20	-12	0.0	0.002	118
10	Cereals	651	-26	-5	0.0	0.002	92
12	Oilseed, oleag fruits, grain, seed, fruit, etc, nes	42,795	3	-2	0.2	0.13	35
16	Meat, Fish and sea food food preparations nes	86,752	-15	0	0.5	0.27	35
17	Sugars and Sugar confectionery	58,240	-15	0	0.5	0.18	35
20	Vegetable, Fruit, nut, etc food preparations	214,186	2	0	1.1	0.67	21
22	Beverages, spirits and vinegar	19,193	4	1	0.1	0.06	66
23	Residues, wastes of food industry, animal fodder	41,472	-12	-3	0.2	0.13	36
24	Tobacco and manufactured tobacco substitutes	36,390	-3	-5	0.2	0.11	51

Source: TIPS (2003).

Appendix 4.15A: Product Group Exported by South Africa in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share In World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	34,016,368					
02	Meat and edible offal meat	199,821	61	0	0.5	0.59	24
03	Fish and crustaceans	271,235	7	2	0.6	0.79	36
04	Dairy products, eggs, honey	36,159	-9	0	0.1	0.11	45
07	Edible vegetables and certain roots	26,892	-10	1	0.1	0.08	53
08	Edible Fruits, nuts, peel of citrus fruit, melons	549,188	-2	-2	1.9	1.61	12
09	Coffee, tea, mate and spices	32,860	0	-12	0.3	0.09	48
10	Cereals	133,466	-17	-5	0.4	0.39	29
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	59,573	4	-2	0.3	0.18	27
16	Meat, Fish and sea food food preparations nes	19,475	8	0	0.1	0.06	64
17	Sugars and Sugar confectionery	446,201	7	-5	2.9	1.31	10
20	Vegetable, Fruit, nut, etc food preparations	207,999	-7	0	1.0	0.61	22
22	Beverages, spirits and vinegar	406,602	5	1	1.1	1.19	17
23	Residues, wastes of food industry, animal fodder	17,255	13	-3	0.1	0.05	57
24	Tobacco and manufactured tobacco substitutes	139,665	14	-5	0.7	0.41	26

Source: TIPS (2003).

Appendix 4.16A: Product Group Exported by Thailand in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports 1997- 2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	65,113,280					
02	Meat and edible offal meat	596,004	10	0	1.5	0.92	15
03	Fish and crustaceans	2023,305	-2	2	4.8	3.11	5
04	Dairy products, eggs, honey	102,442	17	0	0.3	0.16	32
07	Edible vegetables and certain roots	380,006	-7	1	1.7	0.58	12
08	Edible Fruits, nuts, peel of citrus fruit, melons	204,889	2	-2	0.7	0.31	30
09	Coffee, tea, mate and spices	43,495	-16	-12	0.4	0.07	44
10	Cereals	1641,193	-7	-5	4.9	2.52	6
12	Oilseed, oleagic fruits, grain, seed, fruit, etc, nes	46,500	5	-2	0.2	0.07	33
16	Meat, Fish and sea food food preparations nes	2407,591	5	0	15.1	3.70	1
17	Sugars and Sugar confectionery	797,768	-6	-5	5.1	1.23	4
20	Vegetable, Fruit, nut, etc food preparations	650,547	1	0	3.3	0.10	11
22	Beverages, spirits and vinegar	135,942	2	1	0.4	0.20	27
23	Residues, wastes of food industry, animal fodder	263,656	1	-3	1.3	0.40	16
24	Tobacco and manufactured tobacco substitutes	68,508	-7	-5	0.3	0.11	40

Source: TIPS (2003).

Appendix 4.17A: Product Group Exported by Uruguay in 2001.

Stellenbosch University <http://scholar.sun.ac.za>

HS REV.0	Product	Value 2001 US\$000	Annual Growth 1997-2001 %	Annual Growth Value of World Exports, 1997-2001	Share in World Exports	Contribution to the total Exports	Ranking in World Exports
	All products	2,057,580					
02	Meat and edible offal meat	258,818	-10	0	0.6	12.59	19
03	Fish and crustaceans	91,057	-3	2	0.2	4.43	57
04	Dairy products, eggs, honey	138,642	-5	0	0.5	6.74	28
07	Edible vegetables and certain roots	853	-24	1	0.0	0.04	123
08	Edible Fruits, nuts, peel of citrus fruit, melons	54,030	-7	-2	0.2	2.63	50
09	Coffee, tea, mate and spices	390	-10	-12	0.0	0.02	127
10	Cereals	172,638	-17	-5	0.5	8.40	25
16	Meat, Fish and sea food food preparations nes	25,720	-7	0	0.2	1.25	56
17	Sugars and Sugar confectionery	5,970	2	-5	0.0	0.29	90
20	Vegetable, Fruit, nut, etc. food preparations	3,737	-2	0	0.0	0.18	92
22	Beverages, spirits and vinegar	6,808	-3	1	0.0	0.33	87
23	Residues, wastes of food industry, animal fodder	3,823	-19	-3	0.0	0.19	85
24	Tobacco and manufactured tobacco substitutes	50,408	14	-5	0.2	2.45	43

Source: TIPS (2003).

The Structures of Agricultural Exports.

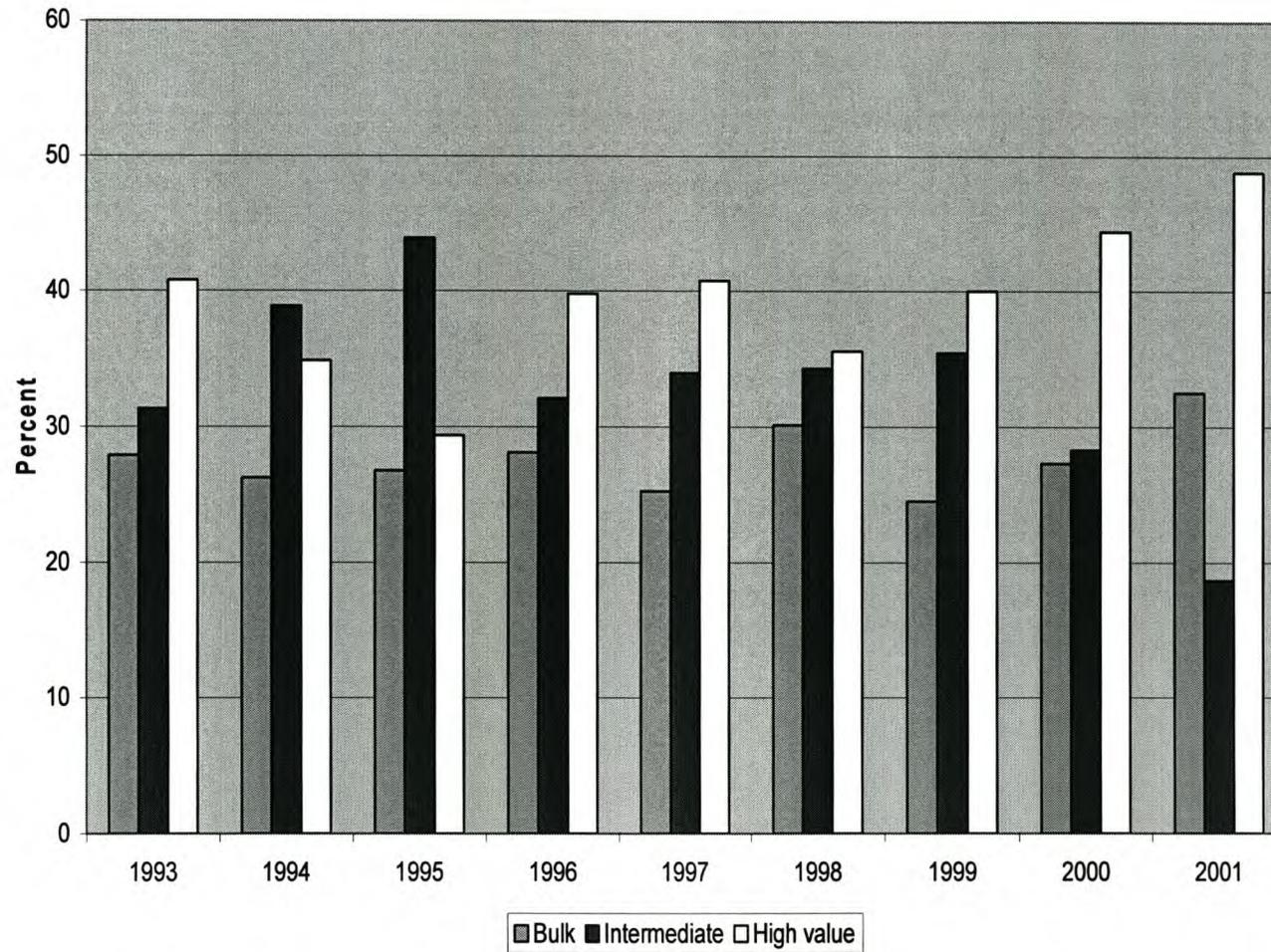


Figure 4.1B: The Structure of Argentina's Agricultural Exports.

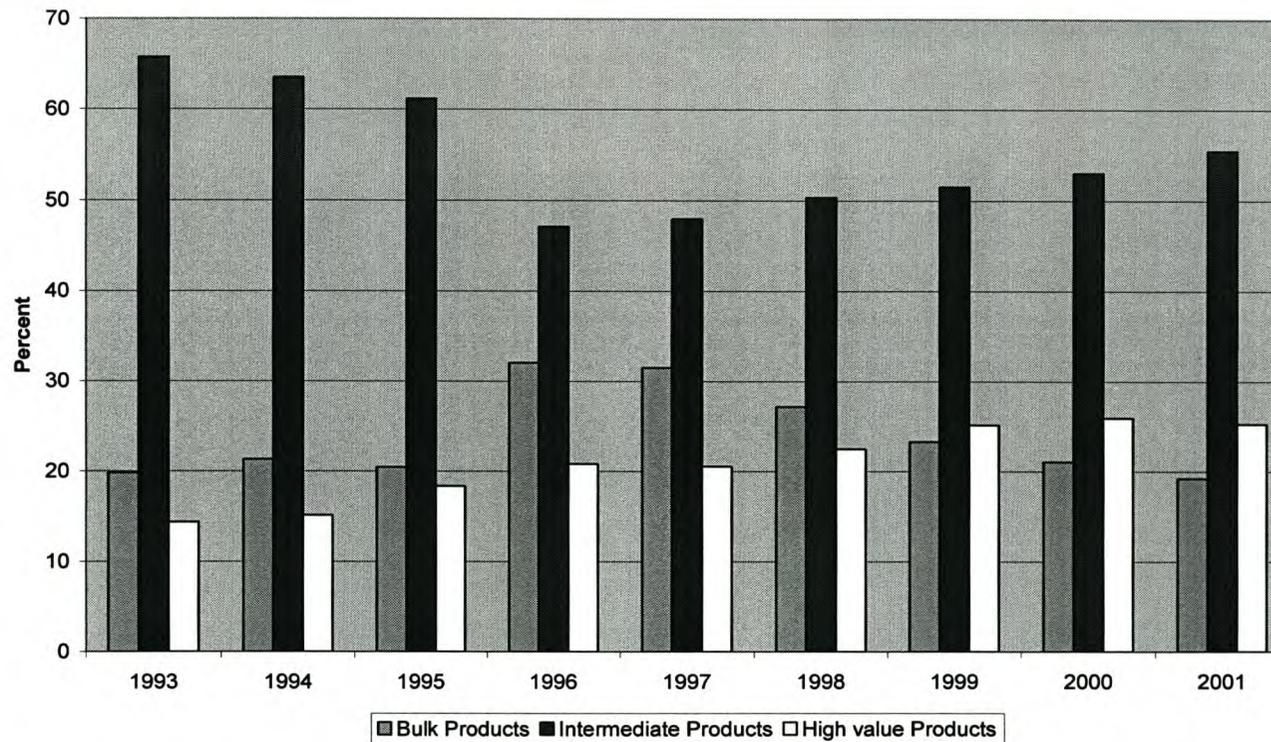


Figure 4.2B: The Structure of Australia's Agricultural Exports.

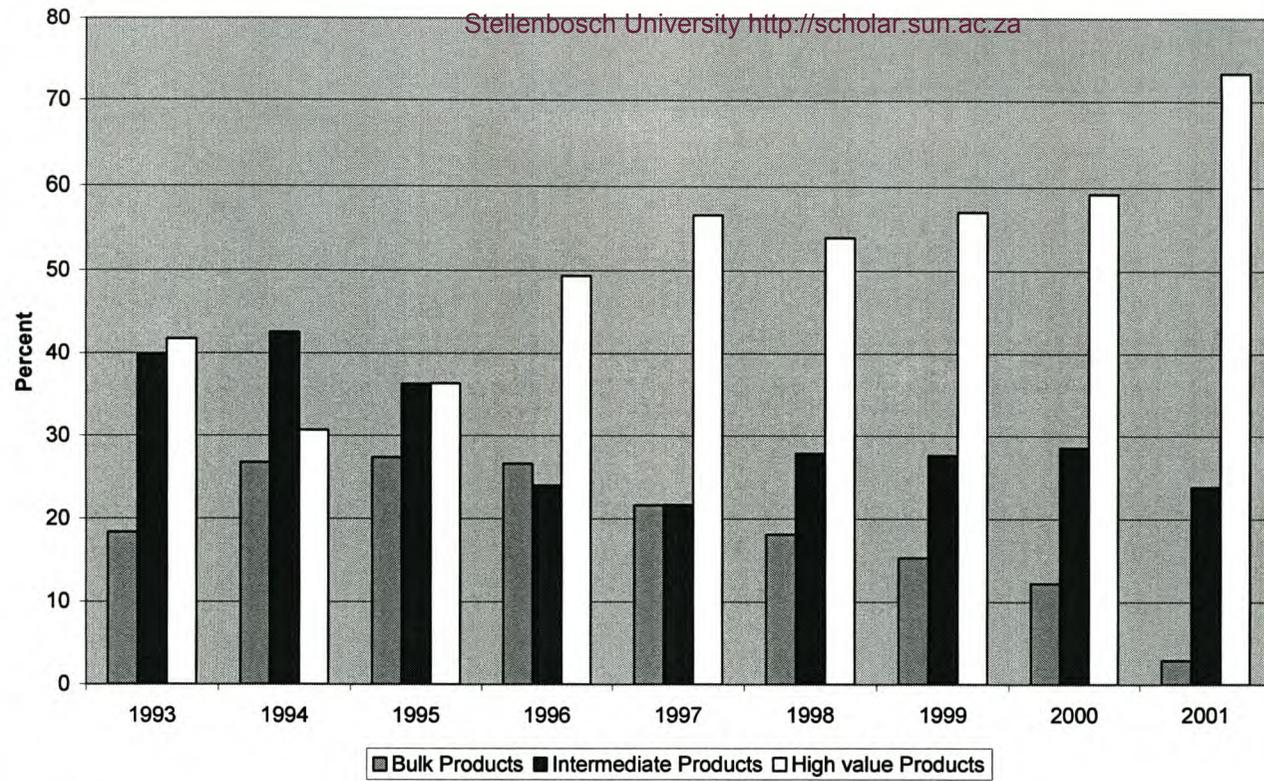


Figure 4.3B: The Structure of Bolivia's Agricultural Exports.

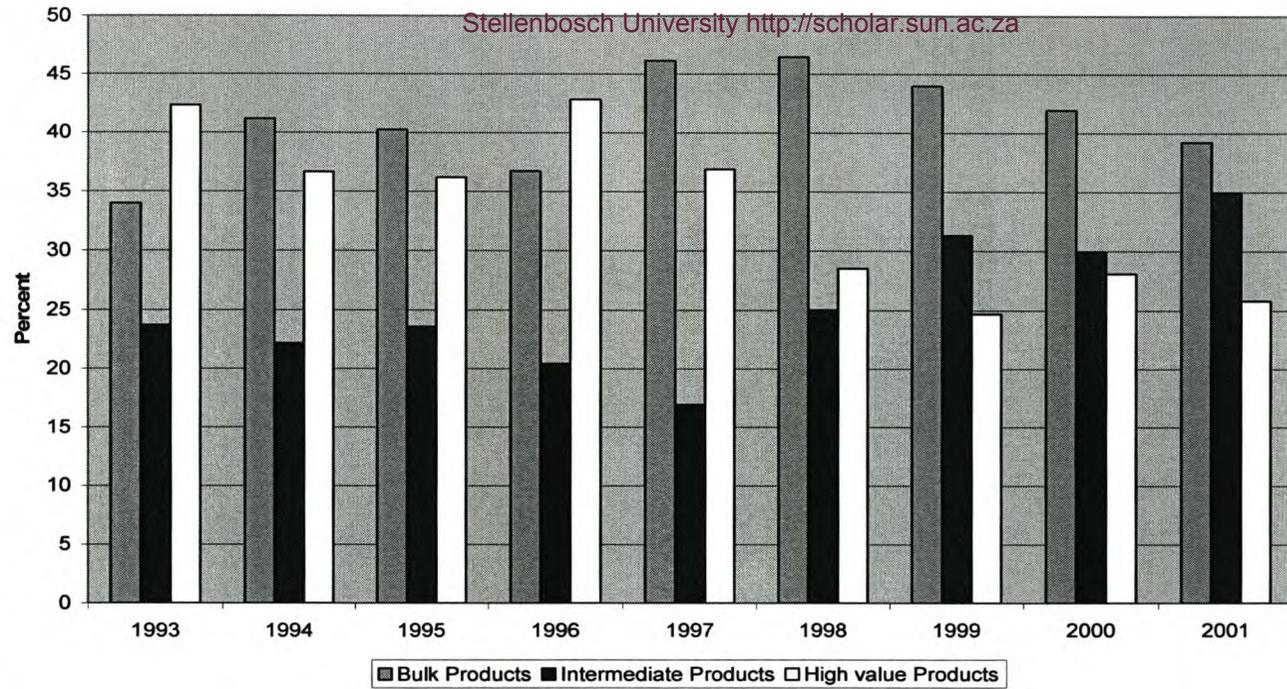


Figure 4.4B: The Structure of Brazil's Agricultural Exports.

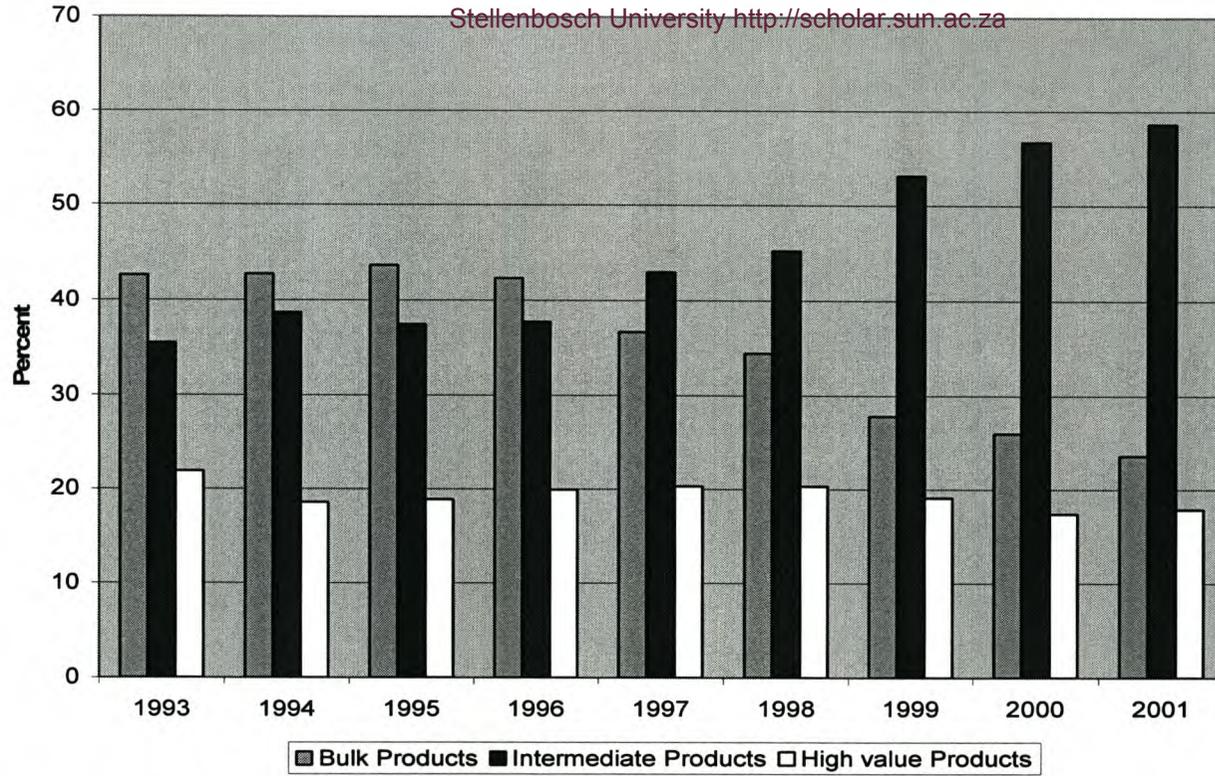


Figure 4.5B: The Structure of Canada's Agricultural Exports.

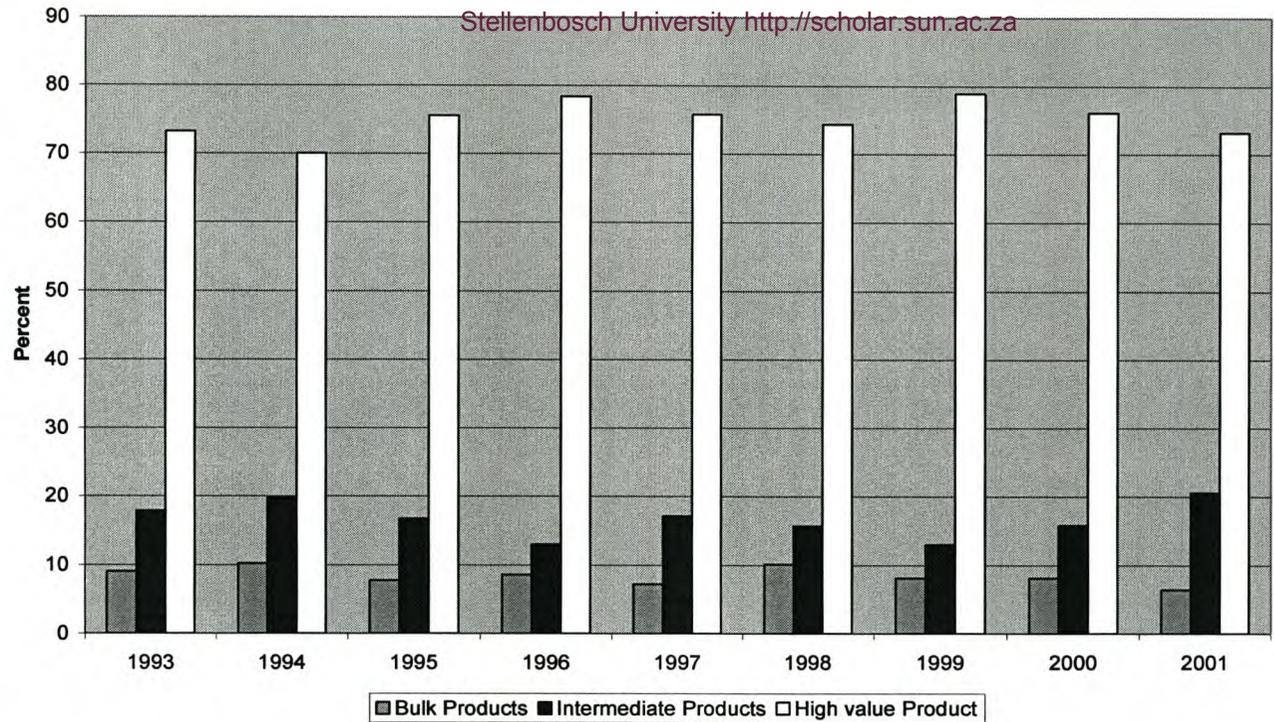


Figure 4.6B: The Structure of Chile's Agricultural Exports.

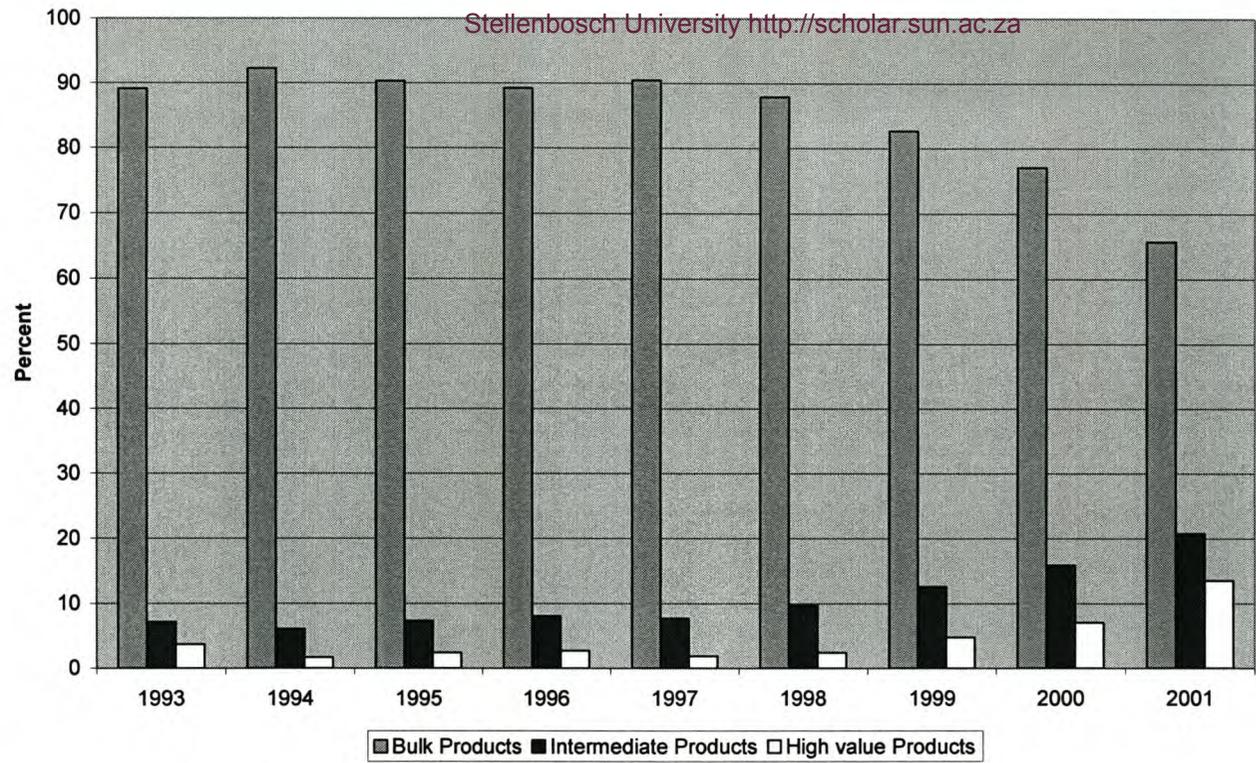


Figure 4.7B: The Structure of Colombia's Agricultural Exports.

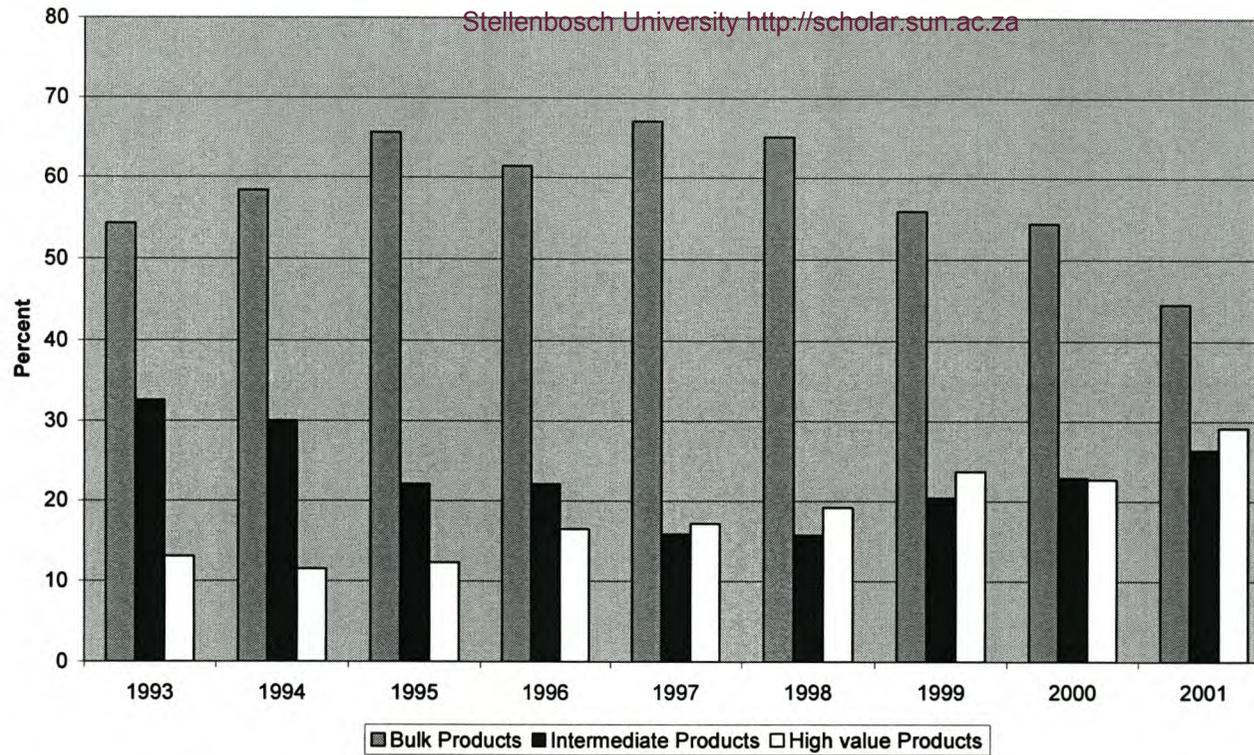


Figure 4.8B: The Structure of Costa Rica's Agricultural Exports.

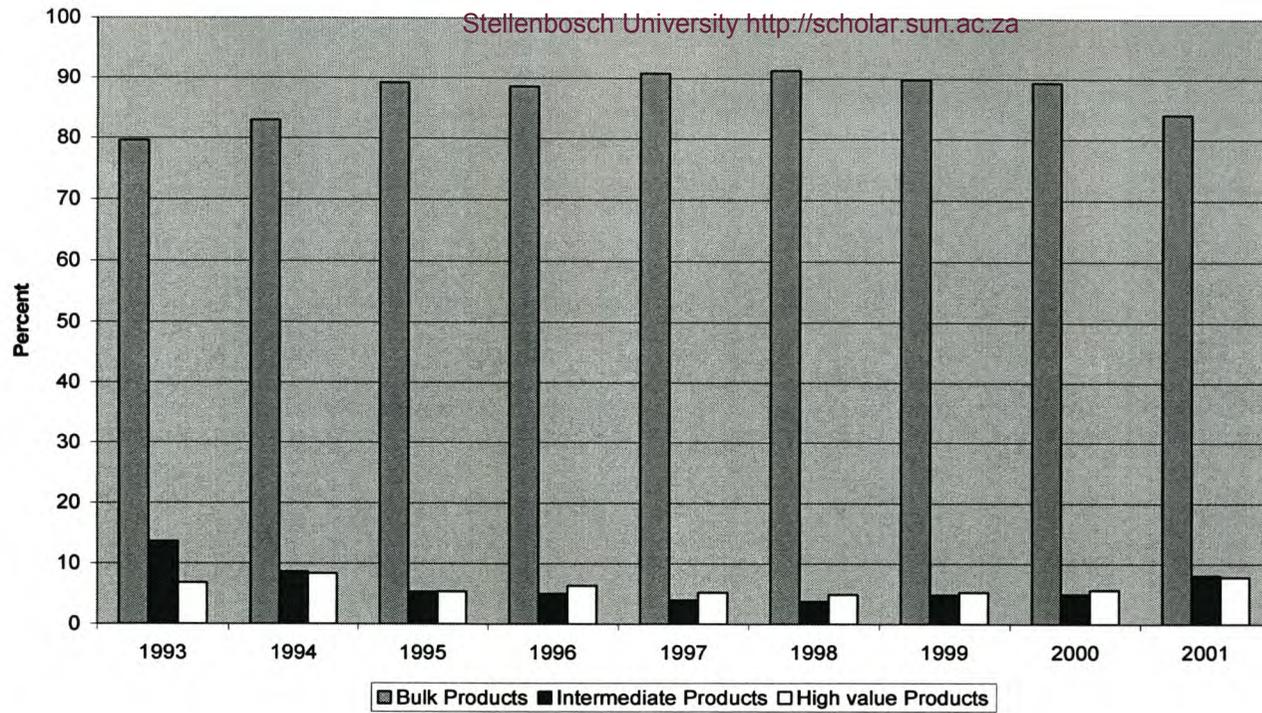


Figure 4.9B: The Structure of Guatemala's Agricultural Exports.

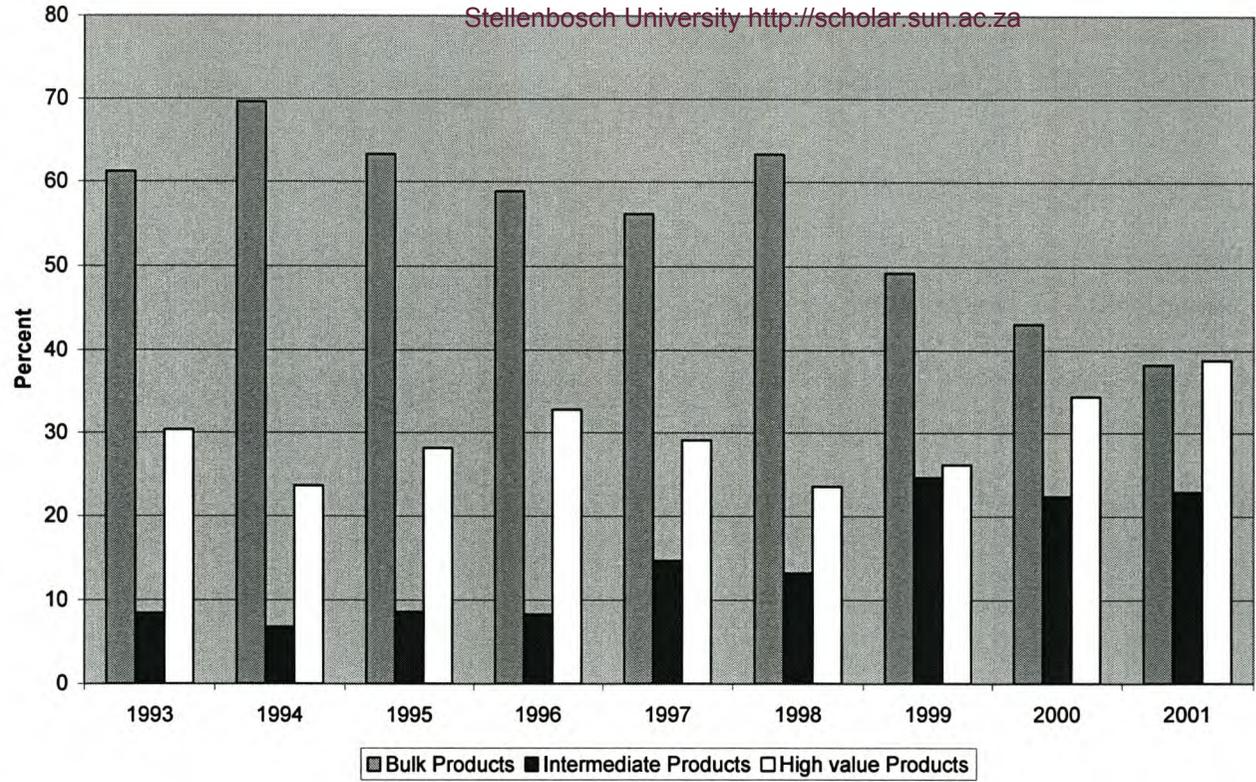


Figure 4.10B: The Structure of Indonesia's Agricultural Exports.

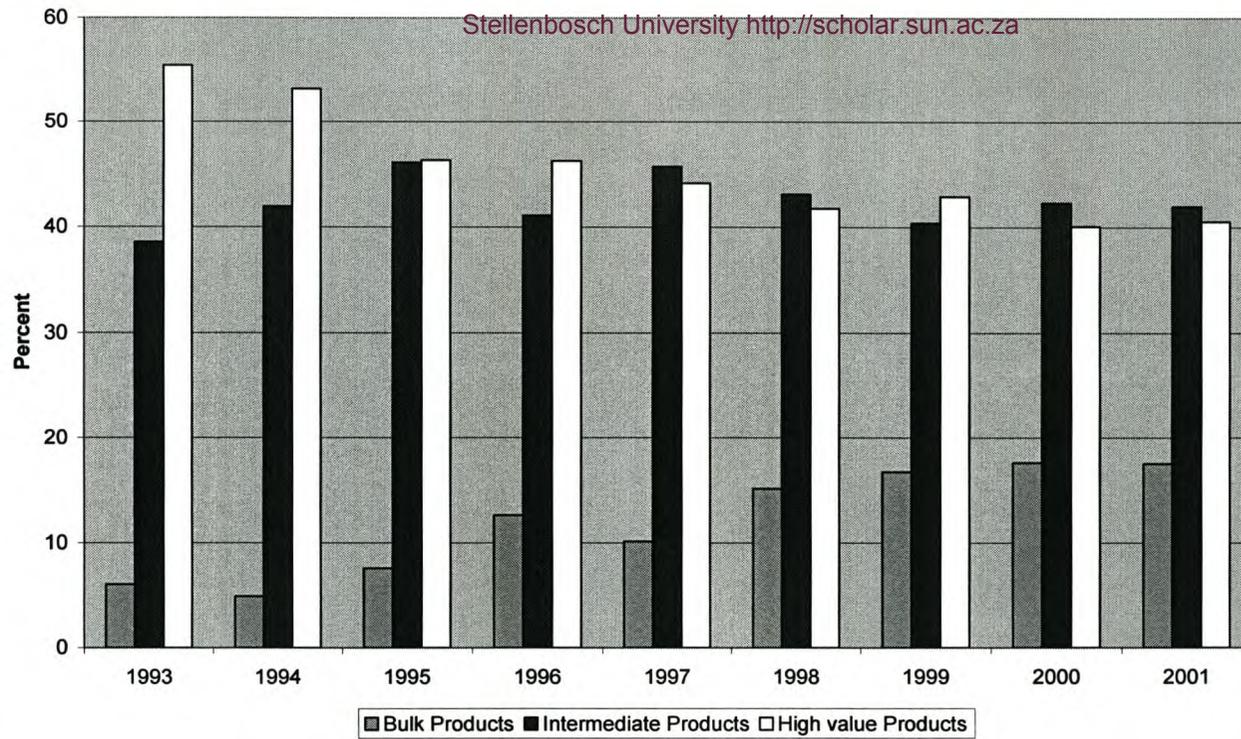


Figure 4.11B: The Structure of Malaysia's Agricultural Exports.

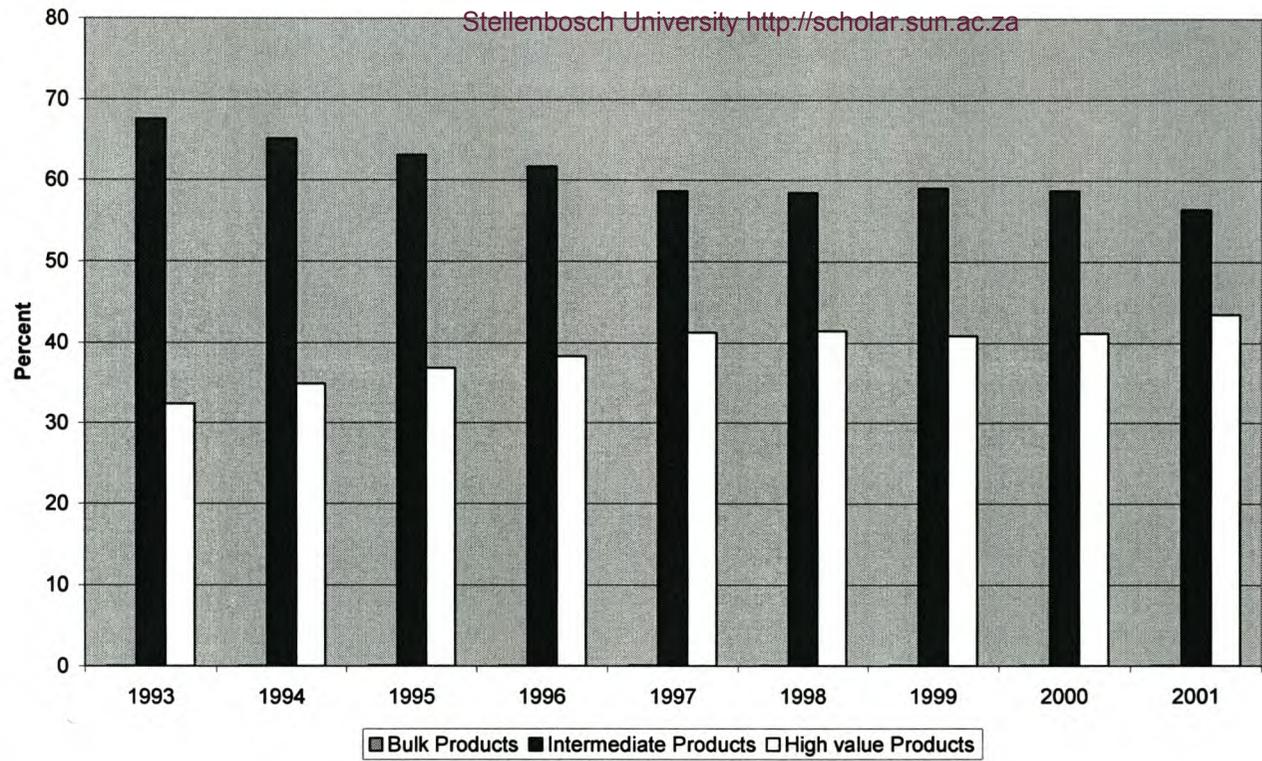


Figure 4.12B: The Structure of New Zealand's Agricultural Exports.

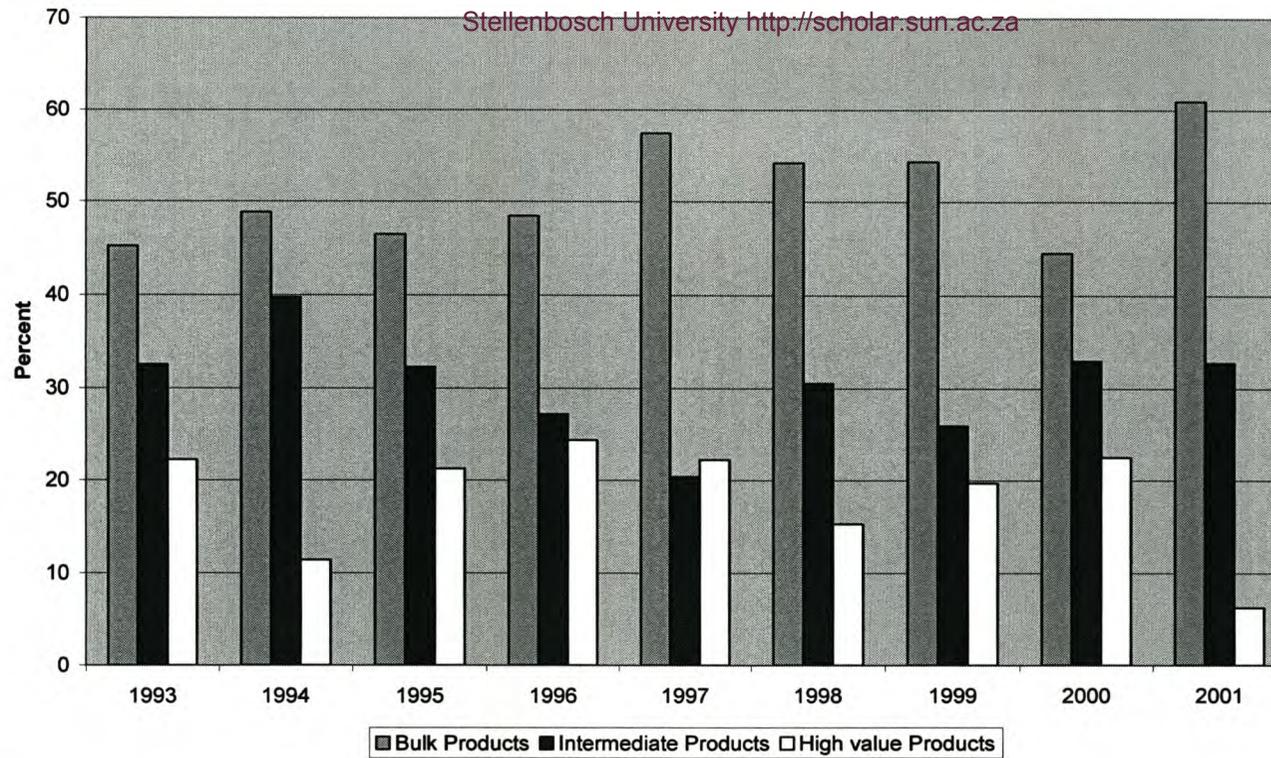


Figure 4.13B: The Structure of Paraguay's Agricultural Exports.

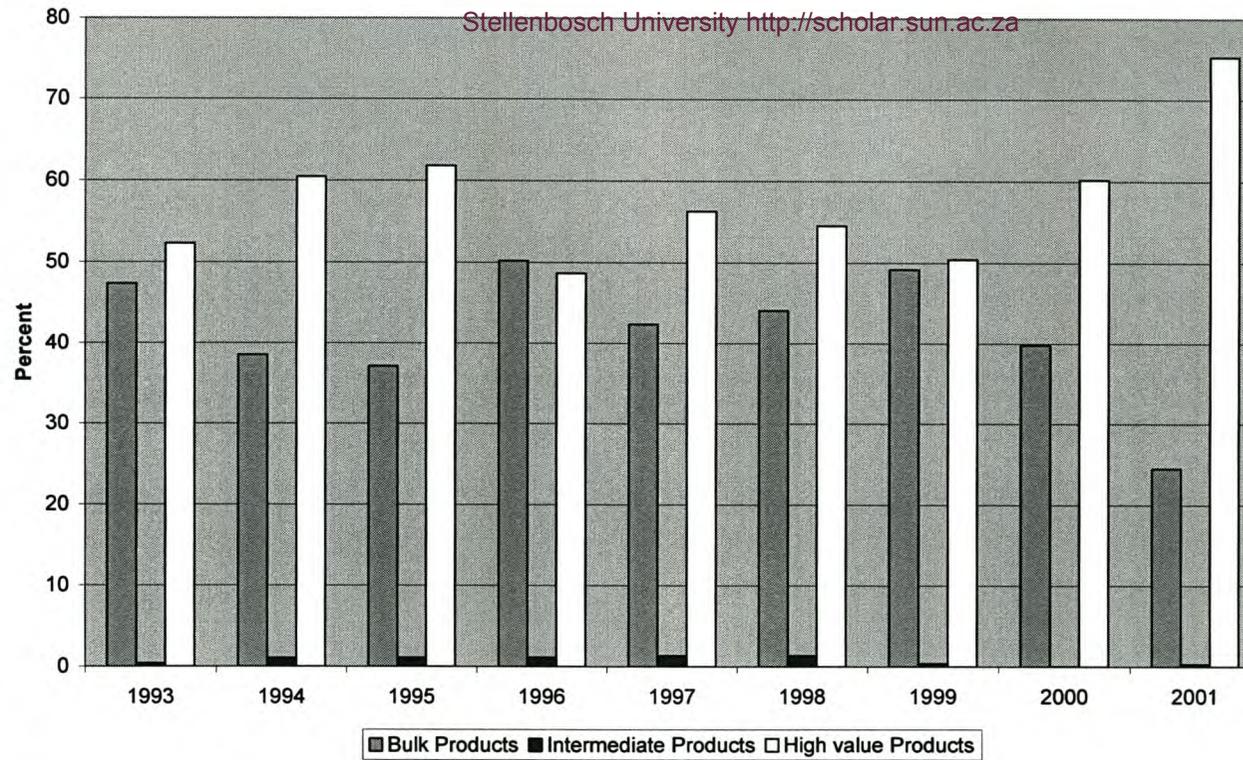


Figure 4.14B: The Structure of Philippines' Agricultural Exports.

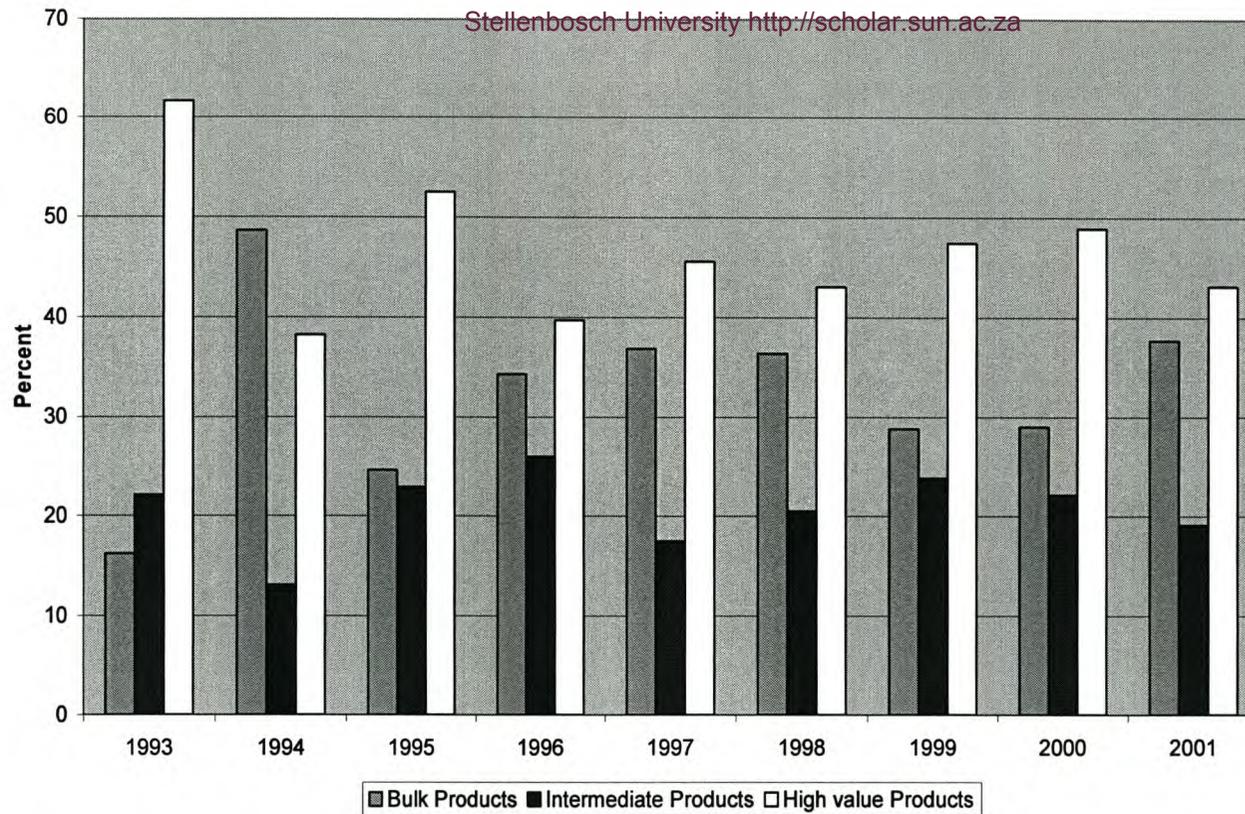


Figure 4.15B: The Structure of South Africa's Agricultural Exports.

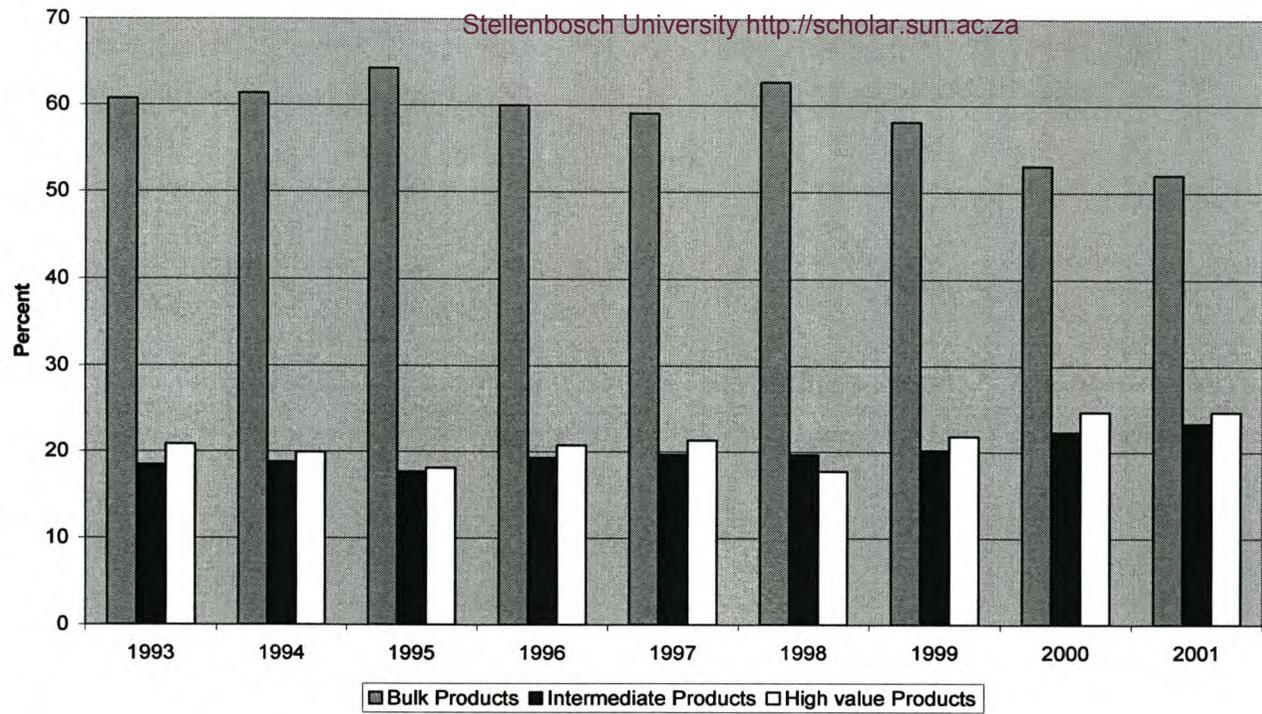


Figure 4.16B: The Structure of Thailand's Agricultural Exports.

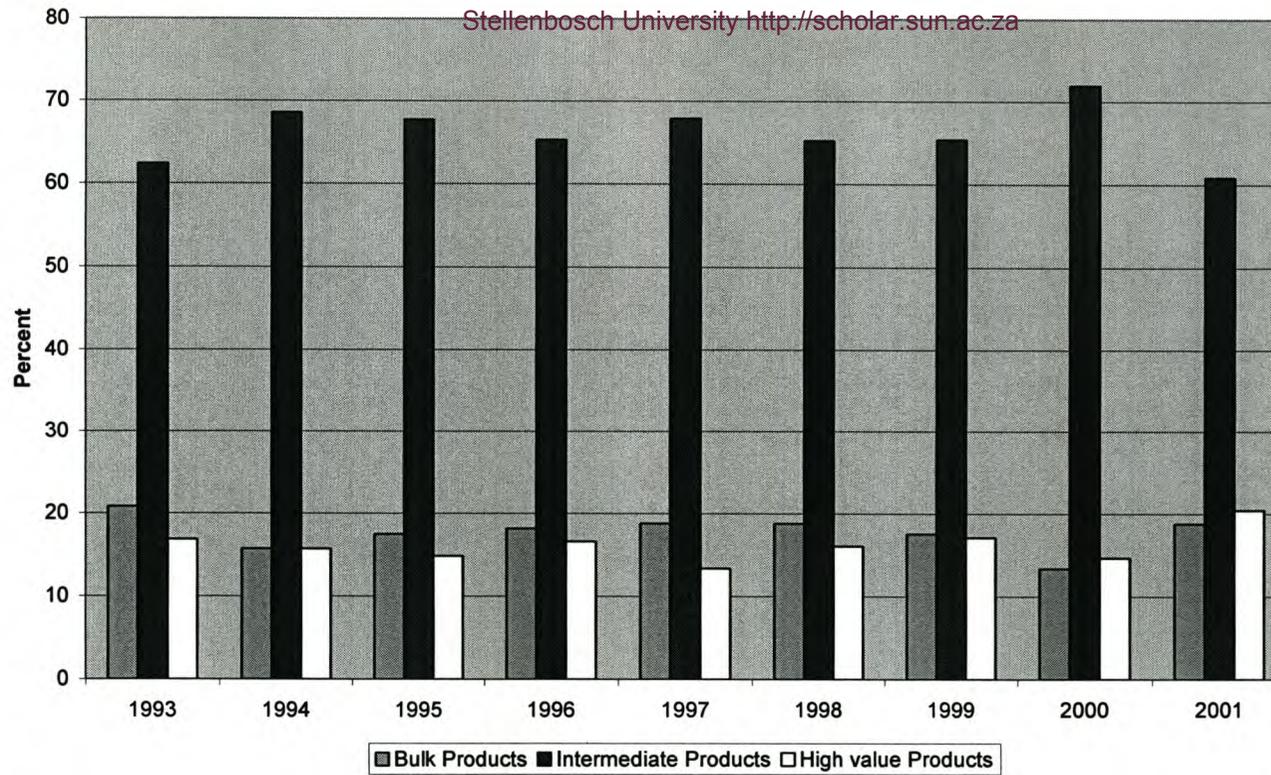


Figure 4.17B: The Structure of Uruguay's Agricultural Exports.

Table 4.1C: Competitive advantage of selected food chains in Argentina and Australia based on the Relative Revealed Trade Advantage (RTA) index.

Chain	Product	Argentinean RTA 2000	Argentinean Trend 1995-2000	Australian RTA 2000	Australian Trend 1995-2000
Wheat	Wheat	22.65	+	20.77	+
	Flour of Wheat	-712.94	-	2.80	+
	Macaroni	109.70	-	-1.29	+
	Pastry	0.64	=	-0.96	+
	Bread	-0.042	+	-0.18	+
	Breakfast Cereals	-0.94	-	1.08	+
Maize	Maize	31.17	+	0.10	+
	Flour of Maize	4.05	+	-0.40	+
Sugar	Sugar (Centrifugal, Raw)	1.56	+	26.21	+
	Sugar refined	1.09	+	1.30	+
	Sugar Confectionery	2.33	+	n/a	n/a
	Maple sugar and syrups	-0.11	-	-3.11	+
Soybeans	Soybean	21.06	+	0.03	+
	Oil of soya beans	131.54	+	-0.05	=
	Cake of soya beans	112.22	-	-0.08	=
	Soya Sauce	-0.20	+	-4.41	=
Groundnut	Groundnuts in shell	n/a	=	0.01	-
	Groundnuts Unshelled	58.48	-	-0.37	-
	Groundnut oil	57.74	-	-0.24	-
	Prepared Groundnuts	25.58	-	-0.29	+
Cotton	Cotton seed	5.70	-	59.42	-
	Oil of cotton seed	-252.42	=	0.19	-
	Cake of Cotton seed	-419.65	-	32.51	-
	Cotton lint	1.52	-	16.34	-
	Cotton linter	-0.16	-	-0.17	-
Beef	Meat Bovine Fresh	7.76	+	17.43	-
	Beef and Veal	-2.74	+	2.89	+
Mutton	Meat sheep fresh	0.15	+	34.65	+
	Mutton and lamb	0.15	+	33.76	+
Pork	Pig meat	-2.05	+	0.20	-
	Bacon-ham	-3.92	+	0.04	+
Milk	Cow Milk (whole, fresh)	0.62	-	1.81	+
	Butter from cow milk	0.79	-	7.09	+
	Cheese	0.85	-	-1.21	+

Sunflower	Sunflower seed	14.04	-	0.72	-
	Sunflower oil	114.22	-	-0.08	-
	Sunflower cake	230.02	-	0.09	-
Tomatoes	Tomatoes	-0.78	+	0.12	-
	Tomato juice	n/a	n/a	n/a	n/a
	Tomato Paste	-4.01	-	-0.74	-
	Peeled Tomatoes	-1.20	-	-3.36	-
Orange	Oranges	1.59	-	4.76	+
	Orange juice	-4.49	-	n/a	n/a
Grape	Grapes	3.33	+	-0.96	=
	Grape juice	33.10	-	0.44	-
	Wine	2.59	-	-1	n/a
Coffee	Coffee	-1.54	-	-0.65	+
	Roasted Coffee	-0.21	-	-1.21	-
	Coffee extract	-0.76	-	-2.31	=
Tobacco	Tobacco	1.43	-	-0.45	-
	Tobacco leaves	4.92	-	-0.61	-
	Tobacco products	0.58	-	-0.35	-

Source: Own calculations based on data from FAOSTAT 2002.

Note: “+” Positive trend, “-” negative trend and “=” constant trend

Table 4.2C: Competitive advantage of selected food chains in Bolivia and Brazil based on the Relative Revealed Trade Advantage (RTA) index.

Chain	Product	Bolivian RTA 2000	Bolivian Trend 1995-2000	Brazilian RTA 2000	Brazilian Trend 1995-2000
Wheat	Wheat	-7.51	=	-6.85	-
	Flour of Wheat	-68.46	-	-3.24	-
	Macaroni	-5185.23	-	-0.71	+
	Pastry	-2.25	+	0.35	+
	Bread	-0.02	n/a	-0.05	+
	Breakfast Cereals	-3.74	-	0.29	+
Maize	Maize	0.35	+	-2.03	-
	Flour of Maize	-22.91	-	1.01	+
Sugar	Sugar, (Centrifugal, Raw)				
	Sugar refined	5.49	+	25.39	-
	Sugar Confectionery	2.77	-	11.84	-
	Maple sugar and syrups	-10.19	-	1.47	+
		n/a	n/a	-0.02	+

Soybeans	Soybean	8.11	+	34.34	+
	Oil of soya beans	19.25	-	16.47	-
	Cake of soya beans	109.19	-	213.46	+
	Soya Sauce	-0.25	n/a	-1.75	+
Groundnut	Groundnuts in shell	1.24	-	0.47	-
	Groundnuts Unshelled	0.03	-	-0.29	-
	Groundnut oil	n/a	n/a	-0.09	-
	Prepared Groundnuts	-0.12	+	-0.41	-
Cotton	Cotton seed	0.05	-	0.28	-
	Oil of cotton seed	-1.46	n/a	11.81	-
	Cake of Cotton seed	-0.05	-	-0.59	-
	Cotton lint	-3.99	-	-4.75	-
	Cotton linter	-9.48	+	157.91	-
Beef	Meat Bovine Fresh	-0.08	-	3.15	+
	Beef and Veal	0.11	+	-1.18	-
Mutton	Meat sheep fresh	-0.002	n/a	-0.61	-
	Mutton and lamb	0.11	n/a	-0.64	-
Pork	Pig meat	-0.08	-	1.60	+
	Bacon-ham	-0.23	-	0.004	+
Milk	Cow Milk (whole, fresh)	0.09	+	-1.13	+
	Butter from cow milk	0.67	+	-0.67	+
	Cheese	-0.17	+	-0.39	+
Sunflower	Sunflower seed	-7.80	-	-0.39	-
	Sunflower oil	22.90	-	-1.90	+
	Sunflower cake	122.42	+	-0.42	-
Tomatoes	Tomatoes	-0.15	-	0.19	-
	Tomato juice	n/a	n/a	n/a	n/a
	Tomato Paste	-2.26	-	-0.45	+
	Peeled Tomatoes	n/a	n/a	-0.30	+
Orange	Oranges	-0.05	-	0.98	-
	Orange juice	-0.06	n/a	350.49	-
Grape	Grapes	-1.15	-	0.25	+
	Grape juice	-0.10	-	4.16	+
	Wine	-0.19	-	-0.67	-
Coffee	Coffee	6.52	-	26.87	-
	Roasted Coffee	0.04	+	0.13	+
	Coffee extract	-4.36	-	15.32	-
Tobacco	Tobacco	-101.77	-	4.41	-
	Tobacco leaves	-1.37	-	18.82	-
	Tobacco products	-133.26	-	1.07	+

Source: Own calculations based on data from FAOSTAT 2002.

Table 4.3C: Competitive advantage of selected food chains in Canada and Chile based on the Relative Revealed Trade Advantage (RTA) index.

Chain	Product	Canadian RTA 2000	Canadian Trend 1995-2000	Chilean RTA 2000	Chilean Trend 1995-2000
Wheat	Wheat	4.68	+	-1.48	+
	Flour of Wheat	0.56	=	-0.20	-
	Macaroni	-0.31	=	-0.45	-
	Pastry	-0.09	=	-0.04	-
	Bread	2.65	=	-0.06	-
	Breakfast Cereals	-0.57	=	-0.42	-
Maize	Maize	-0.33	-	-2.002	-
	Flour of Maize	-1.52	+	-0.37	-
Sugar	Sugar (Centrifugal, Raw)	-1.06	=	0.005	+
	Sugar refined	-0.07	=	-4.21	-
	Sugar Confectionery	-0.20	=	-0.28	-
	Maple sugar and syrups	-22.19	-	-0.02	n/a
Soybeans	Soybean	0.25	-	-0.47	+
	Oil of soya beans	0.01	-	-1.28	+
	Cake of soya beans	-0.54	-	-3.82	=
	Soya Sauce	-1.14	-	-0.62	-
Groundnut	Groundnuts in shell	-0.92	=	-0.14	-
	Groundnuts Unshelled	-2.24	=	-1.55	-
	Groundnut oil	-0.03	=	-0.002	-
	Prepared Groundnuts	-0.35	=	n/a	n/a
Cotton	Cotton seed	-6.19	-	-1.58	-
	Oil of cotton seed	0.02	-	-0.05	-
	Cake of Cotton seed	-0.36	-	-1.59	-
	Cotton lint	-0.28	-	-0.096	-
	Cotton linter	-0.08	-	-0.04	=
Beef	Meat Bovine Fresh	1.25	+	-4.11	-
	Beef and Veal	2.62	+	0.001	=
Mutton	Meat sheep fresh	-0.54	-	1.20	-
	Mutton and lamb	-0.53	-	1.25	-
Pork	Pig meat	1.46	+	1.07	-
	Bacon-ham	0.84	+	-0.13	+
Milk	Cow Milk (whole, fresh)	0.03	-	0.02	-
	Butter from cow milk	-0.12	-	-0.39	-
	Cheese	-0.21	-	-0.50	-
Sunflower	Sunflower seed	0.34	+	5.08	+
	Sunflower oil	-0.19	=	-3.23	+

	Sunflower cake	-0.02	=	-5.448	-
Tomatoes	Tomatoes	-0.01	=	0.43	+
	Tomato juice	n/a	n/a	n/a	n/a
	Tomato Paste	-0.99	-	19.49	-
	Peeled Tomatoes	-1.34	-	0.87	-
	Oranges	-1.30	-	0.27	+
Orange	Orange juice	-4.52	-	n/a	n/a
	Grapes	-2.04	=	87.99	+
Grape	Grape juice	-4.12	-	7.27	+
	Wine	-1.23	-	16.26	+
	Coffee	-0.72	-	-0.64	-
Coffee	Roasted Coffee	-2.06	=	-0.13	=
	Coffee extract	0.05	+	0.27	-
	Tobacco	0.04	-	0.04	-
Tobacco	Tobacco leaves	0.17	-	-0.21	-
	Tobacco products	-0.24	-	0.97	+

Source: Own calculations based on data from FAOSTAT 2002.

Table 4.4C: Competitive advantage of selected food chains in Colombia and Costa Rica based on the Relative Revealed Trade Advantage (RTA) index.

Chain	Product	Colombian RTA 2000	Colombian Trend 1995-2000	Costa Rican RTA 2000	Costa Rican Trend 1995-2000
Wheat	Wheat	-4.41	-	-2.15	=
	Flour of Wheat	-0.32	-	2.14	=
	Macaroni	-0.94	=	1.19	=
	Pastry	0.47	+	1.45	=
	Bread	-0.003	=	0.65	=
	Breakfast Cereals	-2.66	-	-7.96	-
Maize	Maize	-10.12	-	-5.22	-
	Flour of Maize	1.08	+	11.39	+
Sugar	Sugar (Centrifugal, Raw)	13.37	+	7.49	+
	Sugar refined	7.22	-	0.01	=
	Sugar Confectionery	9.98	=	-1.39	-
	Maple sugar and syrups	-0.53	-	-0.14	=
Soybeans	Soybean	-3.52	-	-4.82	=
	Oil of soya beans	-12.32	-	1.95	+
	Cake of soya beans	-6.17	-	0.24	+
	Soya Sauce	-0.53	=	1.29	+
Groundnut	Groundnuts in shell	-0.036	-	-4.65	-
	Groundnuts Unshelled	-0.97	-	-1.31	-

	Groundnut oil	-0.003	=	-0.01	-
	Prepared Groundnuts	-0.38	=	1.47	+
Cotton	Cotton seed	-1.46	-	-0.04	-
	Oil of cotton seed	0.03	=	n/a	n/a
	Cake of Cotton seed	-6.47	-	n/a	n/a
	Cotton lint	-5.22	-	-0.12	-
	Cotton linter	-0.18	-	n/a	n/a
Beef	Meat Bovine Fresh	0.06	+	1.96	+
	Beef and Veal	0.15	-	-0.14	+
Mutton	Meat sheep fresh	0.15	=	-0.32	-
	Mutton and lamb	0.15	=	-0.03	-
Pork	Pig meat	-0.3	-	0.09	+
	Bacon-ham	-0.0005	=	-0.02	+
Milk	Cow Milk (whole, fresh)	0.17	-	2.79	+
	Butter from cow milk	0.0009	-	-0.04	+
	Cheese	0.15	-	n/a	n/a
Sunflower	Sunflower seed	-0.03	-	-0.35	=
	Sunflower oil	-4.61	-	-7.73	-
	Sunflower cake	-8.09	-	n/a	n/a
Tomatoes	Tomatoes	0.15	=	0.06	-
	Tomato juice	-0.62	=	n/a	n/a
	Tomato Paste	-0.07	+	-3.20	-
	Peeled Tomatoes	-0.07	+	-0.52	-
Orange	Oranges	-0.03	+	0.07	=
	Orange juice	n/a	n/a	23.90	+
Grape	Grapes	-1.17	-	15.47	+
	Grape juice	-1.75	-	155.47	+
	Wine	-0.43	=	12.51	+
Coffee	Coffee	72.51	-	37.73	+
	Roasted Coffee	-2	n/a	3.75	-
	Coffee extract	31.72	+	0.14	+
Tobacco	Tobacco	-0.29	+	-0.22	+
	Tobacco leaves	-485.02	=	-0.03	+
	Tobacco products	-0.003	-	-0.24	-

Source: Own calculations based on data from FAOSTAT 2002.

Table 4.5C: Competitive advantage of selected food chains in Guatemala based on the Relative Revealed Trade Advantage (RTA) index.Stellenbosch University <http://scholar.sun.ac.za>

Chain	Product	Guatemala's RTA 2000	Guatemalan Trend 1995-2000
Wheat	Wheat	-3.59	+
	Flour of Wheat	-0.01	+
	Macaroni	2.83	+
	Pastry	3.33	+
	Bread	-0.84	-
	Breakfast Cereals	30.28	=
Maize	Maize	-3.79	-
	Flour of Maize	19.43	+
Sugar	Sugar (Centrifugal, Raw)	112.16	+
	Sugar refined	0.009	+
	Sugar Confectionery	-1.35	-
	Maple sugar and syrups	-0.73	-
Soybeans	Soybean	0.12	+
	Oil of soya beans	-5.22	-
	Cake of soya beans	-5.22	+
	Soya Sauce	0.27	=
Groundnut	Groundnuts in shell	-2.94	-
	Groundnuts Unshelled	-0.45	-
	Groundnut oil	-0.08	+
	Prepared Groundnuts	-0.74	-
Cotton	Cotton seed	0.78	-
	Oil of cotton seed	-2.53	-
	Cake of Cotton seed	-5.93	+
	Cotton lint	-4.66	-
	Cotton linter	0.11	+
Beef	Meat Bovine Fresh	-0.27	-
	Beef and Veal	-0.28	-
Mutton	Meat sheep fresh	0.0004	+
	Mutton and lamb	0.0003	+
Pork	Pig meat	-0.66	-
	Bacon-ham	-0.37	+
Milk	Cow Milk (whole, fresh)	-2.54	-
	Butter from cow milk	-0.69	=
	Cheese	-1.08	-
Sunflower	Sunflower seed	-0.32	-
	Sunflower oil	-4.71	-
	Sunflower cake	n/a	n/a
Tomatoes	Tomatoes	5.83	+
	Tomato juice	n/a	-

	Tomato Paste Peeled Tomatoes	-4.44 0.17	+
Orange	Oranges Orange juice	-1.69 -2.69	- +
Grape	Grapes Grape juice Wine	-3.48 -0.46 -0.26	- + -
Coffee	Coffee Roasted Coffee Coffee extract	177.76 0.50 -1.53	+ + -
Tobacco	Tobacco Tobacco leaves Tobacco products	-3.48 -0.46 -0.28	+ + +

Source: Own calculations based on data from FAOSTAT 2002.

Table 4.6C: Competitive advantage of selected food chains in Indonesia and Malaysia based on the Relative Revealed Trade Advantage (RTA) index.

Chain	Product	Indonesian RTA 2000	Indonesian Trend 1995-2000	Malaysian RTA 2000	Malaysian Trend 1995-2000
Wheat	Wheat	-5.97	+	-0.85	+
	Flour of Wheat	-10.28	-	0.42	-
	Macaroni	0.83	+	-0.005	-
	Pastry	0.28	+	0.78	+
	Bread	0.06	+	-0.02	=
	Breakfast Cereals	-0.63	-	0.05	=
Maize	Maize	-2.88	-	-1.92	+
	Flour of Maize	-0.61	-	-1.61	-
Sugar	Sugar (Centrifugal, Raw)	-3.43	+	-4.28	-
	Sugar refined				
	Sugar Confectionery	-8.74	+	0.89	+
	Maple sugar and syrups	0.78	-	0.07	+
Soybeans		-0.02	=	-0.006	+
	Soybean	-5.18	+	-0.94	+
	Oil of soya beans	-0.58	-	1.20	+
	Cake of soya beans	-7.08	-	-1.02	+
Groundnut	Soya Sauce	-1.004	-	0.02	-
	Groundnuts in shell	-10.63	-	-3.82	+
	Groundnuts Unshelled	-8.46	+	-1.09	+
	Groundnut oil	-0.003	-	-0.70	+
	Prepared Groundnuts	0.10	+	-0.59	-

Cotton	Cotton seed	0.06	=	n/a	n/a
	Oil of cotton seed	0.19	=	0.09	+
	Cake of Cotton seed	1.06	+	n/a	n/a
	Cotton lint	-20.40	+	-1.13	+
	Cotton linter	0.01	n/a	n/a	n/a
Beef	Meat Bovine Fresh	-0.52	-	-0.60	-
	Beef and Veal	-0.06	+	-0.22	-
Mutton	Meat sheep fresh	-0.05	+	-0.71	+
	Mutton and lamb	-0.05	+	-0.67	+
Pork	Pig meat	-0.02	-	-0.02	+
	Bacon-ham	-0.005	+	0.04	-
Milk	Cow Milk (whole, fresh)	-0.23	+	0.02	+
	Butter from cow milk				
	Cheese	-1.23	+	-0.49	+
		-0.21	+	-0.11	-
Sunflower	Sunflower seed	-0.56	-	-0.21	-
	Sunflower oil	-0.05	-	-0.26	+
	Sunflower cake	-0.002	=	n/a	n/a
Tomatoes	Tomatoes	0.008	+	0.06	+
	Tomato juice	-0.84	=	n/a	n/a
	Tomato Paste	-2695.99	-	-0.60	+
	Peeled Tomatoes	-62.99	-	-0.02	=
Orange	Oranges	-0.17	-	-0.74	-
	Orange juice	0.005	-	-0.27	=
Grape	Grapes	-0.75	-	-0.27	=
	Grape juice	-0.10	-	-0.07	-
	Wine	-0.01	+	-0.05	+
Coffee	Coffee	3.79	-	-0.16	+
	Roasted Coffee	0.40	-	-0.22	-
	Coffee extract	1.04	-	0.71	+
Tobacco	Tobacco	-0.44	=	0.11	=
	Tobacco leaves	-1.74	+	-0.96	=
	Tobacco products	-4.69	-	1.17	+

Source: Own calculations based on data from FAOSTAT 2002.

Table 4.7C: Competitive advantage of selected food chains in New Zealand and Paraguay based on the Relative Revealed Trade Advantage (RTA) index.
 Stellenbosch University <http://scholar.sun.ac.za>

Chain	Product	New Zealand's RTA 2000	New Zealand's Trend 1995-2000	Paraguay's RTA 2000	Paraguay Trend 1995-2000
Wheat	Wheat	-1.22	-	2.26	+
	Flour of Wheat	-0.50	+	-6.13	-
	Macaroni	-16.19	-	-1.39	=
	Pastry	-1.99	=	-3.90	-
	Bread	-0.69	=	-0.07	+
	Breakfast Cereals	-2.27	+	-1.50	-
Maize	Maize	-0.03	+	-0.34	-
	Flour of Maize	2.83	-	-6.51	+
Sugar	Sugar (Centrifugal, Raw)	-4.43	-	11.30	-
	Sugar refined	-0.14	+	-0.82	-
	Sugar Confectionery	-1.69	+	-4.21	+
	Maple sugar and syrups	-0.59	+	n/a	n/a
Soybeans	Soybean	-0.009	+	190.64	-
	Oil of soya beans	-1.400	-	68.92	-
	Cake of soya beans	-0.69	+	66.56	=
	Soya Sauce	-3.75	-	-0.27	+
Groundnut	Groundnuts in shell	-0.56	-	0.31	-
	Groundnuts Unshelled	-2.09	+	4.90	-
	Groundnut oil	-0.34	=	n/a	n/a
	Prepared Groundnuts	-5.97	-	-0.02	-
Cotton	Cotton seed	-0.76	+	-19.29	-
	Oil of cotton seed	-1.44	+	n/a	n/a
	Cake of Cotton seed	n/a	n/a	388.64	-
	Cotton lint	-0.003	-	67.09	-
	Cotton linter	-0.04	-	28.73	=
Beef	Meat Bovine Fresh	25.11	+	27.26	+
	Beef and Veal	3.53	+	27.86	+
Mutton	Meat sheep fresh	360.51	+	-0.04	-
	Mutton and lamb	374.16	+	-0.04	-
Pork	Pig meat	-0.95	+	-0.07	+
	Bacon-ham	-0.001	-	0.006	+
Milk	Cow Milk (whole, fresh)	5.57	+	-0.29	-
	Butter from cow milk	130.45	+	-0.15	-
	Cheese	27.05	+	-0.95	-
Sunflower	Sunflower seed	-0.21	+	2.87	-
	Sunflower oil	-0.21	+	15.19	-

	Sunflower cake	n/a	n/a	0.922	-
Tomatoes	Tomatoes	0.37	=	-2.19	-
	Tomato juice	n/a	n/a	n/a	n/a
	Tomato Paste	-2.86	-	n/a	n/a
	Peeled Tomatoes	-3.03	-	-0.47	-
Orange	Oranges	-1.73	-	-1.14	-
	Orange juice	n/a	n/a	n/a	n/a
Grape	Grapes	-1.83	=	-0.69	-
	Grape juice	0.0004	-	-0.12	-
	Wine	1.46	+	-2.83	-
Coffee	Coffee	-0.42	=	0.21	+
	Roasted Coffee	-2.48	-	0.05	+
	Coffee extract	-3.80	-	-0.85	+
Tobacco	Tobacco	-0.35	-	-4.91	+
	Tobacco leaves	-0.82	+	0.27	-
	Tobacco products	0.06	+	-21.12	-

Source: Own calculations based on data from FAOSTAT 2002.

Table 4.8C: Competitive advantage of selected food chains in Philippines and South Africa based on the Relative Revealed Trade Advantage (RTA) index.

Chain	Product	The Philippines RTA 2000	The Philippines Trend 1995- 2000	South African RTA 2000	South African Trend 1995-2000
Wheat	Wheat	-4.58	-	-0.89	-
	Flour of Wheat	-0.65	=	2.05	+
	Macaroni	-0.41	-	-0.50	-
	Pastry	-0.11	+	-0.07	-
	Bread	0.04	+	-0.22	-
	Breakfast Cereals	0.16	-	-0.10	+
Maize	Maize	-1.17	-	1.13	+
	Flour of Maize	-0.15	-	5.35	-
Sugar	Sugar (Centrifugal, Raw)				
	Sugar refined	1.83	+	1.18	-
	Sugar Confectionery	-2.29	-	4.95	+
	Maple sugar and syrups	-0.20	+	0.57	+
Soybeans		-0.05	-	-0.04	=
	Soybean	-2.06	-	-0.37	=
	Oil of soya beans	-0.80	-	-0.25	=
	Cake of soya beans	-4.70	-	-1.91	+
	Soya Sauce	0.84	-	-0.20	=
Groundnut	Groundnuts in shell	n/a	n/a	17.02	+
	Groundnuts Unshelled	-5.29	+	2.58	+

	Groundnut oil	-0.01	+	3.60	=
	Prepared Groundnuts	0.00	+	0.65	=
Cotton	Cotton seed	0.03	-	-5.51	=
	Oil of cotton seed	-0.003	n/a	0.39	+
	Cake of Cotton seed	-0.003	n/a	-12.35	=
	Cotton lint	-1.39	+	-0.78	=
	Cotton linter	-0.28	+	0.50	+
Beef	Meat Bovine Fresh	-1.25	-	0.27	=
	Beef and Veal	-0.08	-	0.26	=
Mutton	Meat sheep fresh	-0.05	-	-1.93	-
	Mutton and lamb	-0.06	-	-1.99	-
Pork	Pig meat	-0.32	+	-0.76	=
	Bacon-ham	-0.004	+	-0.001	=
Milk	Cow Milk (whole, fresh)				
	Butter from cow milk	-0.86	-	0.45	=
	Cheese	-1.25	-	-0.48	=
Sunflower	Sunflower seed	-0.10	-	0.13	=
	Sunflower oil	-0.06	+	-3.98	-
	Sunflower cake	n/a	n/a	-3.33	-
Tomatoes	Tomatoes	-0.002	+	0.10	=
	Tomato juice	n/a	n/a	-0.04	=
	Tomato Paste	-2.68	-	-0.10	=
	Peeled Tomatoes	-0.14	-	-0.60	=
Orange	Oranges	-0.31	=	17.43	=
	Orange juice	-0.33	=	1.61	+
Grape	Grapes	-0.25	+	14.12	=
	Grape juice	-0.21	+	7.65	+
	Wine	0.17	-	4.02	+
Coffee	Coffee	-0.24	-	-0.51	=
	Roasted Coffee	-0.05	-	-0.27	=
	Coffee extract	-0.26	-	-0.06	=
Tobacco	Tobacco	-1.06	-	0.56	n/a
	Tobacco leaves	-2.33	-	-0.15	-
	Tobacco products	0.17	+	-0.03	=

Source: Esterhuizen and others (2001) and own calculations based on data from FAOSTAT 2002.

Table 4.9C: Competitive advantage of selected food chains in Thailand and Uruguay based on the Relative Revealed Trade Advantage (RTA) index.
 Stellenbosch University <http://scholar.sun.ac.za>

Chain	Product	Thailand RTA 2000	Thailand's Trend 1995-2000	Uruguay's RTA 2000	Uruguay's Trend 1995-2000
Wheat	Wheat	-0.66	+	0.22	-
	Flour of Wheat	-0.47	=	5.48	+
	Macaroni	2.43	=	-1.99	-
	Pastry	0.64	=	-2.64	-
	Bread	-0.001	-	-0.06	=
	Breakfast Cereals	0.53	+	-2.28	-
Maize	Maize	-0.28	-	-4.78	-
	Flour of Maize	-0.08	-	-2.61	-
Sugar	Sugar (Centrifugal, Raw)	8.02	+	-5.73	=
	Sugar refined				
	Sugar Confectionery	0.34	+	-0.05	+
	Maple sugar and syrups	0.63	=	-4.06	-
		-0.005	-	n/a	n/a
Soybeans	Soybean	-2.89	-	-0.02	-
	Oil of soya beans	0.34	+	-0.31	-
	Cake of soya beans	-3.77	+	-1.83	-
	Soya Sauce	1.77	-	-0.66	-
Groundnut	Groundnuts in shell	-0.51	-	-0.31	=
	Groundnuts Unshelled	-1.05	-	-1.79	-
	Groundnut oil	n/a	n/a	n/a	n/a
	Prepared Groundnuts	0.49	+	-0.82	=
Cotton	Cotton seed	0.08	+	-9.40	-
	Oil of cotton seed	-0.01	=	-0.06	n/a
	Cake of Cotton seed	n/a	n/a	n/a	n/a
	Cotton lint	-6.83	=	-0.17	=
	Cotton linter	-2.37	-	-0.06	=
Beef	Meat Bovine Fresh	-0.02	+	-0.0001	=
	Beef and Veal	-0.02	-	32.00	+
Mutton	Meat sheep fresh	-0.01	=	44.17	+
	Mutton and lamb	-0.01	=	45.32	+
Pork	Pig meat	0.11	+	-1.52	-
	Bacon-ham	0.006	+	-0.41	-
Milk	Cow Milk (whole, fresh)	0.08	-	24.42	+
	Butter from cow milk				
	Cheese	n/a	n/a	8.78	=
		-0.03	-	12.73	+
Sunflower	Sunflower seed	-0.32	-	0.08	-
	Sunflower oil	-0.21	=	-6.12	=

	Sunflower cake	-2.24	=	-16.77	-
Tomatoes	Tomatoes	0.005	=	-0.20	+
	Tomato juice	n/a	n/a	n/a	n/a
	Tomato Paste	-0.04	-	-4.00	-
	Peeled Tomatoes	0.89	=	-9.52	-
Orange	Oranges	0.02	-	22.41	=
	Orange juice	n/a	n/a	2.12	-
Grape	Grapes	-0.22	-	0.07	+
	Grape juice	-0.27	-	-0.03	-
	Wine	-0.06	=	0.36	+
Coffee	Coffee	0.47	+	-0.48	
	Roasted Coffee	-0.02	=	-0.56	
	Coffee extract	-0.01	-	-2.52	
Tobacco	Tobacco	-0.28	=	5.12	+
	Tobacco leaves	1.87	+	-5.28	-
	Tobacco products	-0.06	-	0.36	-

Source: Own calculations based on data from FAOSTAT 2002.

Table 4.1D: Commodity Aggregation for the Calculation of the Structures of Agricultural Exports.

<p>BULK AGRICULTURAL PRODUCTS: Bulk Wheat Coffee, Green Cottonseed Maize Rice Oats Soybeans Sugar (Centrifugal, Raw) Sunflower Seed Tobacco Wheat</p>
<p>INTERMEDIATE AGRICULTURAL PRODUCTS: Bacon-Hams of Pigs Beef and Veal Beef Dried Salt Smoked Cereal Preparations Flour/M Meal of oilseeds Flour of Maize Flour of Wheat Macaroni Margarine+Shortening Margarine etc Meat, Dried Meat Bovine Fresh Meat Extracts Meat Fresh+Ch+Frozen Meat Sheep Fresh Mutton and Lamb Oil of Castor Beans Oil of Cotton seed Oil of Groundnuts Oil of Linseed Oil of Maize Oil of Olive Oil of Soya Beans Oil of Sunflower seed Pig Meat</p>

Sausages
Soya Sauce
Sugar and Syrups, nes
Sugar Confectionery
Sugar Refined
Tobacco Products nes
Tomato aste
Cocoa aste
Offal Edible, Fresh
Animal oils and fats
Live animals

HIGH VALUE AGRICULTURAL PRODUCTS:

Bread
Beverage non-alcoholic
Butter
Butter of Cow Milk
Cake of Cotton seed
Cake of Groundnuts
Cake of Linseed
Cake of Maize
Cake of Soya Beans
Cake of Sunflower Seed
Cheese (Whole Cow Milk)
Cheese and Curd
Cigarettes
Cigars Cheroots
Fruit Dried nes
Fresh Fruit nes
Fruit juice nes
Fruit prepared nes
Maple sugar and syrups
Milk Cond+Dry+Fresh
Milk Cond+Evap
Peeled Tomatoes
Raisins
Spices
Chocolate products
Vegetable Fresh nes
Vegetables prepared nes
Wine
Cocoa Butter
Feeding stuff

Source: Author.