MERCOSUR Union, Porter's diamond and the competitiveness of the Uruguayan broiler industry

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Abstract

This study focuses on the analysis and assessment of competitiveness within the Uruguayan broiler industry. Porter's (1990) 'national diamond' was selected as the appropriate framework for analysis and was applied to the six major Uruguayan broiler firms.

This research reveals that the unique characteristics of the Uruguayan broiler industry are successfully accommodated within the selected framework to explain the success of the broiler industry against other meat substitutes. Therefore, this study has confirmed Porter's (1990) diamond system as an adequate conceptualization of success in the Uruguayan broiler industry. These results are consistent with those found in the existing literature, lending support to the view that Porter's (1990) model seems to be applicable to developing countries such as Uruguay.

However, some modifications of the model are required to fully explain the progress of this industry. This research project presents an adaptation of Porter's (1990) 'diamond' to the singularities of the firms investigated in this study.

This study opted for an industry-level case study research strategy that is operationalized through in-depth personal interviews with owner directors and managers in six of the seven possible organizations within Uruguay. This is augmented by further data collection (additional interviews) through sources in government and market relevant bodies in order to generate information on the national context. The selected research method showed its utility for the investigation of weaknesses and strengths within the Uruguayan broiler industry. These findings were used to accomplish the second objective of this research which was to elaborate policy recommendations out of the primary and secondary collected data that would help Uruguayan broiler firms to compete with international broiler firms in a regional economic block (MERCOSUR) without barriers.

Declaration

I declare that the work in this thesis was carried out in accordance with the regulations of the University of Gloucestershire and is original except where indicated by specific reference in the text. No part of the thesis has been submitted as part of any other academic award. The thesis has not been presented to any other education institution in the United Kingdom or overseas.

Any views expressed in the thesis are those of the author and in no way represent those of the University.

Signed: ..... Date: .....

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Finally, I would like to dedicate this thesis to my family and wife who have always given me courage and support.

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List of Symbol and Abbreviations

ALADI	LATIN AMERICAN INTEGRATION ASSOCIATION
BPC	THE BRITISH POULTRY COUNCIL
BROU	.THE REPUBLIC BANK OF URUGUAY
BSE	BOVINE SPONGIFORM ENCEPHALOPATHY
CIF	COST, INSURANCE AND FREIGHT
CMC	THE COMMON MARKET COUNCIL
CMG	THE COMMON MARKET GROUP
COMISEC	THE SECTORIAL COMMISSION FOR MERCOSUR
ECJ	THE EUROPEAN COURT OF JUSTICE
EFTA	EUROPEAN FREE TRADE ASSOCIATION
EU	EUROPEAN UNION
FAO	FOOD AND AGRICULTURE ORGANISATION OF THE UNITED NATIONS
FOB	FREE ON BOARD
FTAA	FREE TRADE AREA OF THE AMERICAS
GATT	THE GENERAL AGREEMENT ON TARIFFS AND TRADE
GDP	GROSS DOMESTIC PRODUCT
GNP	GROSS NATIONAL PRODUCT
HACCP	HAZARD ANALYSIS CRITICAL CONTROL POINT
HS	HARMONIZED SYSTEM
IDG	INSTITUTE FOR GROCERY DISTRIBUTION
IMF	THE INTERNATIONAL MONETARY FUND
IOE	INTERNATIONAL ORGANISATION OF EPIZOOTIC
IPCC	INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE
LATU	LABORATORIO TECNOLOGICO DEL URUGUAY
MAFF	MINISTRY OF AGRICULTURE FISHERIES AND FOOD
MAP	MODIFIED ATMOSPHERE PACKAGING
MERCOSUR	COMMON MARKET OF SOUTH AMERICA
NAFTA	NORTH AMERICAN FREE TRADE AGREEMENT
NGOs	.NON-GOVERNMENTAL ORGANIZATIONS
OPYPA	OFFICE FOR THE DEVELOPMENT OF PROGRAMS AND AGRICULTURE POLITICS
OI	OWNER INTERVIEWEE

PI	PROFESSIONAL INTERVIEWEE
RSPCA	ROYAL SOCIETY FOR THE PREVENTION OF CRUELTY TO ANIMALS
RTAs	REGIONAL TRADE AGREEMENTS
$	AMERICAN DOLLARS
SAM	MERCOSUR ADMINISTRATIVE SECRETARIAT
SGT6	SUBGRUPO DE TRABAJO 6 MEDIO AMBIENTE
SPC	STATISTICAL PROCESS CONTROL
TGA	.TASA GLOBAL ARANCELARIA
TONS	TONNES
UK	UNITED KINGDOM
UNFCCC	UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE
US	UNITED STATES OF AMERICA
USDA	UNITED STATES DEPARTMENT OF AGRICULTURE
USSFTA	.UNITED STATES-SINGAPORE FREE TRADE AGREEMENT
WHO	THE WORLD HEALTH ORGANIZATION
WTO	WORLD TRADE ORGANISATION

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Chapter 1

Introduction

This is a time of great change in Uruguay. The reality of the Common Market of South America (MERCOSUR) union working as an economic trade block comes closer. Until now within MERCOSUR (it has four members: Argentina, Brazil, Paraguay and Uruguay), the agreement has not been fully implemented. Some industries have requested the adoption of an 'adaptation regime'. This adaptation regime has allowed these industries to benefit from various measures of protection, such as tariff and non-tariff barriers that have given them the possibility of competing in isolated environments. As the process of integration continues, the barriers, which have protected some industries such as poultry or wine in Uruguay, will disappear. This will create a new competitive environment for the companies that exist in those sectors.

Several uncompetitive Uruguayan companies belonging to industries such as sugar, plastics, and orange juice have collapsed during the integration process. However, MERCOSUR has also been beneficial for some Uruguayan companies and for the Uruguayan economy as a whole. In fact, Uruguay has clearly increased its exports within the MERCOSUR market. To get full benefit from their integration within the MERCOSUR trade block, Uruguayan companies in different sectors and sub-sectors have to be prepared and adapted in order to compete successfully with international Brazilian and Argentinian companies (the 'big players' of MERCOSUR).

Recently, multinational supermarkets have started trading in the Uruguayan market. Evidence from other countries reveals that these companies show a clear desire to purchase products from the cheapest source, irrespective of where they are in the world. Therefore, Uruguayan food companies cannot take for granted that their products will automatically find a place on such highly competitive sales counters.

This research is concerned with an analysis of Uruguayan broiler competitiveness in this new scenario, where MERCOSUR would operate free of any barriers. Until now, a 'sanitation barrier' has isolated and protected the Uruguayan broiler industry from neighbouring markets. This measure has affected other countries, by making it impossible

to export fresh chicken products to Uruguay. This protection has permitted technological investment and an improvement in the efficiency of some of the links in the chicken food chain but within the comfort of a protected environment. If Uruguayan broiler companies do not improve their competitiveness, they may be displaced by Argentinian or Brazilian broiler firms. The elimination of trade barriers would not only affect the broiler industry but also other agribusiness industries that would have to compete with Brazilian and Argentinian firms.

Contextualization

Competition in regional trade agreements has been widely studied in many parts of the world. Competition in regional trade agreements has been given a lot of attention from both business entrepreneurs and academia. However, there is not much research about how competition may affect industries belonging to trade agreements in a customs union where all participants are developing countries as in MERCOSUR union.

In order to fulfil the need of studying the impact that MERCOSUR union may have on the competitiveness of the Uruguayan broiler industry, this thesis covers the theoretical foundations behind the 'competitiveness' concept and critically reviews some of the relevant theories on international trade and competitive advantage to have been developed to date. From that review, Porter's (1990) diamond system was selected as the most suitable framework to analyse the success of Uruguayan broiler firms over the industry's 42 years of history.

Porter's (1990) diamond system is a comprehensive model that has the ability to incorporate concepts from traditional trade theory, new strategic trade theory and the role of innovation introduced by Schumpeter (1934). Porter's (1990) framework explains how industries belonging to particular countries can achieve and sustain international competitiveness. His approach recognises the influence that industry drivers and exogenous factors have on firm's level of competitiveness. Moreover, Porter's (1990) approach has the advantage of being developed through the use of case studies. Traditional trade theories lack the depth of understanding of complex relations achieved by Porter thanks to his use of diverse case studies from ten different national contexts. Porter's (1990) 'diamond' provides a useful theoretical framework to study competitiveness of particular industries in a wide range of cultural, spatial, and temporal contexts.

The application of Porter's diamond system to the Uruguayan broiler industry permitted to accomplish the principal objectives associated with the study.

The conceptual objectives of this study are:

i. To confirm Porter's (1990) theory of competitive advantage in Uruguay. The study uses the Uruguayan broiler industry as a vehicle for investigating the validity and generalisability of Porter's (1990) diamond in a developing country.
ii. To amend Porter's (1990) diamond to take into consideration those factors and pressures that have shaped the development of Uruguayan broiler firms.

The empirical objectives of this study are:

iii. To evaluate what MERCOSUR's implications are for the competitiveness of the Uruguayan broiler firms.
iv. To evaluate the feasibility of Uruguayan broiler firms to compete with international firms (from Brazil and Argentina) in a regional market without barriers.

The study also has the following policy objective:

v. To produce policy recommendations out of the findings of the interviewed companies, literature review, and secondary data that would help Uruguayan broiler firms to compete with international Argentinian and Brazilian firms in a regional market without barriers.

The Structure of the Thesis

This thesis is structured around ten chapters. Figure 1 outlines the structure of this study. Following the introduction chapters two, three, and four cover the literature review.

Chapter two provides the conceptual framework of the research. The chapter begins with a review of the theoretical foundations behind the 'competitiveness' concept. It then discusses the relevant theories on international trade and competitive advantage to have been developed to date. From this discussion it is concluded that Porter's (1990) theory of National Competitive Advantage is the most suitable framework to apply to the Uruguayan broiler industry.

Chapter three analyses the development of the world poultry industry with particular emphasis on its rapid growth. It identifies the key issues that have helped to shape the success of the poultry industry as well as those aspects that will affect the future evolution of the world poultry market.

Chapter four reviews some major works on regional agreements. In particular, the chapter concentrates on the main characteristics of MERCOSUR and its impact on the Uruguayan economy. The chapter ends with an analysis of the future of MERCOSUR. Chapter five examines the literature concerning environmental politics and trade liberalization. This chapter focuses on market failures within the MERCOSUR region and discusses what could happen to the Uruguayan chicken industry if the cost of production was internalized. This provides the basis for the development of environmental policies (discussed in chapter nine) aimed to improve the competitiveness of the Uruguayan broiler industry.

Chapter six continues with an analysis of the poultry industry but now it concentrates on the MERCOSUR and Uruguayan broiler industry. The chapter also explains the relevant role that agriculture products (mainly poultry) play in the Uruguayan economy and identifies major barriers to the free flow of food with particular emphasis to the intra-regional trading and transport network.

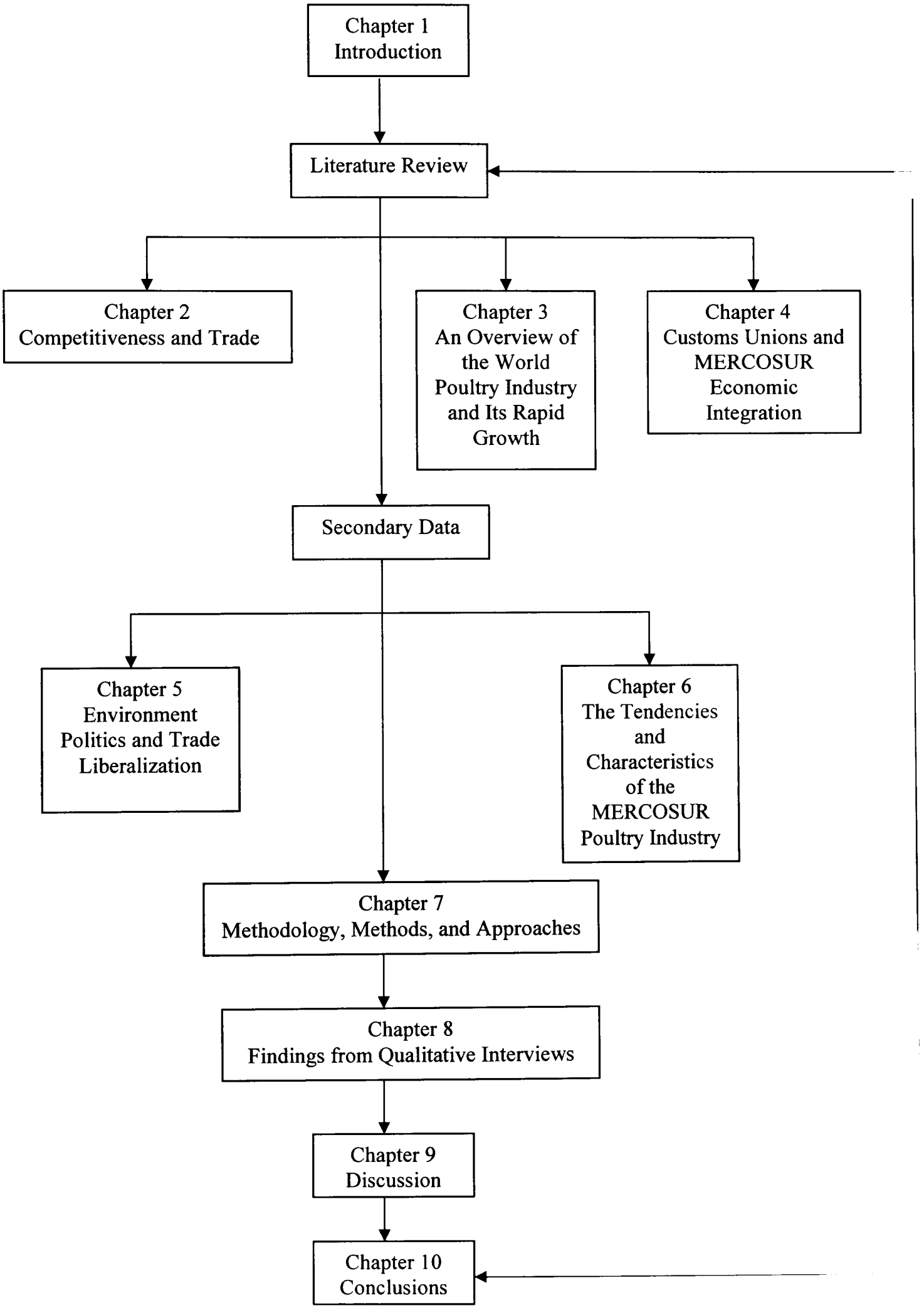
Chapter seven details the research methodology employed in this study. It presents a justification for using a qualitative approach and describes in detail the process followed to analyse the collected data. It then outlines the strengths and limitations of the research.

Chapter eight presents the data of the in-depth interviews from six firms belonging to the Uruguayan broiler industry and government employees involved with the industry. The first section is concerned with general aspects of Uruguayan broiler companies while the second section concentrates on those aspects that are relevant to test all components of Porter's (1990) diamond system.

Chapter nine provides a discussion of the results in the context of the research objectives outlined in chapter one. Finally, chapter ten presents an overview of the main findings of the research and draws out the resulting implications and the potential contributions to knowledge. This chapter also reflects on the significance of the findings and their

implications for other Uruguayan agro-food industries and considerations for future research.

Figure 1: Thesis Structure



Chapter 2

Competitiveness and Trade

This chapter starts by covering the theoretical foundations behind the 'competitiveness' concept. It continues with a critical review of the relevant theories on international trade to have been developed to date. These theories provide useful concepts for understanding competitiveness and trade. The review of international trade theories discusses the main arguments, assumptions, and then critiques the classical economic theories. Then the same approach is applied to the neoclassical trade theory and the new strategic trade theory. Competitive advantage theories are subsequently reviewed in the last section of the chapter. The main objective of this chapter is to determine the most suitable framework to apply to the Uruguayan broiler industry. A critical debate about the selected theories is presented through out the chapter and summarized in the discussion section.

The Competitiveness Concept

There is no general consensus about the meaning of competitiveness. It is a broad and controversial topic. In fact, the term is far from straightforward and has been used in many different ways and contexts in economics and business management. As a result, there are many definitions, theories and different measurements revolving around the concept of competitiveness.

Originally, the term competitiveness arose from the business literature and has been subjected to different interpretations depending on the context in which it is used. For instance, Feurer and Chaharbaghi (1994) define competitiveness in a holistic way. According to these authors, a definition of competitiveness must encompass the following two points:

i. competitiveness is relative and not absolute; and
ii. competitiveness depends on shareholder and customer values, financial strength, and the potential of people and technology to implement strategic changes.

Turok (2004) argues that competitiveness is a function of complex relationships between the following variables:

i. the ability of firms to sell their products in competitive markets;
ii. the value of these products and the efficiency of production; and
iii. the utilization of human, capital, and natural resources.

Economists interested in evaluating a nation's competitiveness have focused on growth rate and standard of living. Supporters of this definition maintain that a competitive nation should be able to provide employment without compromising the growth potential and standard of living of future generations (Landau, 1992). Porter (1990) offers a different approach to nation's competitiveness. He suggests that competitiveness does not stem from the economy as a whole but from the firm and therefore the analysis should be concentrated on specific industries and industry segments. Competitiveness is seen under Porter's (1990) view as the result of the outcome for competitive advantage against foreign rivals in particular segments and industries in which products are created.

The value of the firm upon competitiveness has been addressed by various economists. For them, competitiveness relies on the ability of firms to deliver goods sought by customers at better prices than competitors while earning at least the opportunity cost on resources employed (Sharples & Milham, 1990). At the industry level other economists define competitiveness as the ability of a group of firms with similar characteristics to compete with a group of firms in another sector or with the same sector in foreign markets. A particular industry is competitive when it is able to profitability gain and sustain market share in domestic and/or foreign markets (Coffin, Larue, Banik & Randall, 1993).

Rooted in early works of economic theories, such as Nelson and Winter's (1982), and industrial organization (IO), the resource based-view (RBV) argues that those firms with the ability to accumulate and acquire valuable, rare and non-substitutable resources and capabilities can achieve competitive advantage over competing firms (Barney, 1991). According to the RBV theory competitiveness cannot be attributed to differences in industry conditions but to firm's unique capabilities such as technical know-how or managerial ability that may translate into competitive advantage (Foss, 1997).

The strategic management school defines competitiveness as the ability to profitably create value through product differentiation or cost leadership. According to this definition a firm's competitiveness is related to those factors of production affecting cost and demand

structure. This definition was later refined by Kennedy, Harrison, Kalaitzandonakes, Peterson, and Rindfuss (1997) who included the concepts of qualitative as well as quantitative measures on the evaluation of competitiveness.

Finally, some writers maintain that competitiveness should be associated with the industry's ability to respond quickly to shifts in market demand and changes in technology. In other words they stress the value of flexible production as the driver to enhance productivity growth and competitiveness (Best, 1990).

Looking at the many definitions of competitiveness, it is easy to get confused between the concept of competitiveness and competitive advantage. Competitiveness is a comparative concept that assesses the ability of a nation, industry, or a firm to supply goods/services in a given market. Competitive advantage refers to those firms that deliver either the same services as their competitors at a better price or they deliver better services/goods than their industry rivals (Smith, 2006).

Even though there is no unique definition for competitiveness what is important is to review the theoretical foundations behind the different approaches in order to identify bases of competitiveness. Thus, this chapter continues with a review of relevant theories on international trade and competitive advantage (from Ricardo to Porter) and critically discusses the different approaches to competitiveness.

International Trade Theory

This section will critically review international trade theory. There is a vast range of theories to explain the patterns of nation's exports and imports dating back to the work of Adam Smith and David Ricardo in the eighteenth century. Theories developed by these authors were based on the success of England in the fields of industry and trade. Both Ricardo and Smith supported the view that free trade was the route to achieve production efficiency at a global level (Sen, 2005).

Changes in international competition such as the rise of multinational corporations have weakened the traditional explanations for why and where a nation exports. New theories have attempted to embrace these changes providing new explanations for why some nations are more competitive than others. International trade and foreign investment have

created opportunities to boost national productivity. International trade can help a nation to raise its productivity by specializing in those industries in which its firms are more productive and importing those products where its firms are less productive than foreign competitors. However, free trade also implies a threat to national industries, as they will have to meet productivity standards of foreign companies. This is the main challenge that the Uruguayan broiler industry would face if MERCOSUR starts to fully operate and poultry firms from Brazil and Argentina can access the Uruguayan market.

Traditional Trade Theory

Traditional trade theory aims to explain the reasons for what goods are traded between nations, in which amounts and with whom they are traded. In traditional economic theory, which dominated the 18th and 19th century, the focus was put on the economy as a whole and the interaction of separate decisions by capitalists and labour in the market to generate economic wealth. Theories at that time pointed at the desire of individuals to maximise their profits as the main driving force of economies. In that context the success of a firm was seen to be related to how well the production process was organized through the division of labour and demand for its products (Smith, 1776).

Theory of Absolute Cost Advantage

Adam Smith (1776) was the greatest proponent of classical economies. He maintained that the main reason for individuals to enter into business was to maximize their profit. According to Smith (1776), the division of labour in large-scale industries in England created the conditions for lowering labour costs, which guaranteed effective competition between countries. Smith's theory of absolute cost advantage states that nations should produce and export those goods in which they have an absolute cost advantage compared to other nations. This theory fails to address the size of the countries. According to the theory a larger country would have an absolute advantage in the production of all goods compared to a small country. However, trade between countries of different sizes occurs.

Another weakness of Smith's theory is that it concentrated on macroeconomic aspects but overlooked the microeconomics of individual firms. The theory worked to some extent when it was developed because at that time some of the conditions of perfect competition were in evidence. However, the classical economics approach would not resist scrutinity when applied to economic systems in today's world. In the "real world" perfect

competition is utopian and unrealistic because of the existence of monopolies, products are rarely homogeneous, there is imperfect knowledge about the market by buyers and sellers, and because free market entry is a rare occurrence. Moreover, economies rarely revert back to a state of equilibrium with a balance between supply and demand, minimal inflation, adequate investment, and full employment as Smith's theory would suggest (Helpman, 1984).

Self-interest of producers might not bring economic benefits for the economy as a whole, as Smith claimed, because some producers might be willing to keep producing at the declining stage for too long. Another problem of classical economic theory is the narrow interpretation of the concept of self-interest. According to supporters of the theory, self-interest is only associated with material rewards, so it fails to take into account other factors of motivation that do not include material rewards. The final criticism of the classical economic approach is that it fails to address the influence of distance on the operations within an economy (Ethier, 1982).

Theory of Comparative Advantage

The theory of Adam Smith was some years later refined by David Ricardo (1817) who attributed the international success of industries to labour productivity differences between nations. He claimed that market forces would allocate a nation's resources to those industries where it is relatively most productive. According to his theory of comparative advantage, all countries can gain from trade as long as they specialize in what they do best and as long as the international terms of trade are different from the domestic opportunity cost of production (Murphy, 2001). In this theory, a nation will export those goods in which it has a comparative cost advantage and import those goods in which it has a comparative cost disadvantage (Abbott, 1998). David Ricardo (1817) argued that a nation might import a product even if it could be the lowest-cost producer, when the nation is more productive in producing other goods.

In spite of being one of the most popular and oldest theories to explain patterns of international trade, there are several limitations of the theory of comparative advantage. Some scholars pointed to the fact that the Ricardian theory omits factors of production, besides labour, leaving out important determinants of comparative advantage such as capital and natural resources and it wrongly assumes that countries specialize in the

production of tradable goods (Leamer & Levinsohn, 1996). However, the reality has shown that import-competing sectors seldom disappear in the face of foreign competition (Golub & Hsieh, 2000).

The theory of comparative advantage is built upon two goods that are traded between two countries. Nevertheless, trade is usually conducted between individuals and firms rather than nations. Since individuals and firms are engaged in trade, Ricardo's (1817) claim that trade increases the welfare of all countries may not always be the case (Prasch, 1996).

In the early nineteenth century capital flows were absent or insignificant. Therefore, Ricardo (1817) developed his model without giving consideration to capital flows. However, this has not been the case for a long time and therefore, Ricardo's theory should be modified to take into account the impact of capital flows (Peach, 1993). For instance, Ricardo assumed that all profits from trade would be reinvested in the country. However, multinational corporations will deploy their profits whenever they can maximise their profit margins and not necessarily in their own countries (Barnet & Cavanagh, 1994).

The Ricardian model has also been criticised for its assumptions. According to some authors the theory has failed to recognize the role of transportation costs. Transportation costs are not zero as Ricardo assumed and they place barriers to the movement of goods affecting the world economy (Isard & Peck, 1954). The Ricardian model also assumed that there are no environmental externalities. Ricardo's model claims that all costs and benefits originating from the process of production are fully considered and paid. There are multiple examples indicating that this is not the case and that the model is not capable of handling environmental costs (Shaiken, 1993). The theory also assumed that there are no costs and perfect mobility of all resources including labour. However, employees from companies that go bankrupt are rarely redeployed without costs. In fact, some reports indicate that employees who lose their jobs are likely to be employed in jobs that pay less money than in their previous job. This happens because the skills required for a job in a particular firm are specific and often cannot be applied in other firm (Jacobson, Lalonde & Sullivan, 1993).

According to Craven (1964), the theory of comparative advantage did not work as a predictor of the direction of trade. This author argued that the Ricardian model failed to

incorporate the impacts of decreasing cost conditions that are a result of accelerated technological change. Due to technological changes the world has witnessed variations of productivity, a decrease of prices and a rise of real incomes of some sectors of the population. In that context, demand conditions may play a more relevant role than price differences and comparative advantage has a lower impact on trade.

Neoclassical Trade Theory

From 1870 onwards the neoclassical approach became an important alternative perspective on economic analysis.

The Supply and Demand Curves Theory

Alfred Marshall (1890) was the precursor of a line of thinking that concentrated on marginalist concepts such as the cost of a product, determinants of product value, and consumer utility. The neoclassical economics approach also looked at the influence of plant size, economies of scale, and the temporal dimension of production runs.

Neoclassical theory highlighted the profit maximization function at the firm unit. The firm is seen as a place to transform inputs into higher-valued intermediate and final products. Neoclassical economists are recognized for the development of important concepts such as supply-demand curve equilibrium analysis and a mathematical treatment of the price mechanisms. The difference between classical and neoclassical economics is that while classical economists concentrated on the source of wealth and the division of wealth resources between labour, landowners and capitalists, neoclassical economics stressed the importance of the allocation of scarce resources to meet consumer demand (Bharadwaj, 1989).

Neoclassical theory is based on many assumptions that aim to simplify the explanation of how firms and consumers behave in the market place. These assumptions are:

i. that production cost curves are U-shaped;
ii. that the marginal utility that consumers have for products puts constraints on ultimate market demand for those products;
iii. that all firms seek to maximize their profits;

iv. that resources not used for production will be allocated to increase the firm's production capacity;
v. that supply and demand curves determine the market equilibrium price a good sells for and the amount of good sold in the market;
vi. that a firm is a single product system;
vii. that economic interactions occur independent of spatial factors; and
viii. that managers will always try to maximize profits and economies of scale (Bharadwaj, 1989).

The available critique indicates that neoclassical theories do not give enough attention to innovation in production technology. Some scholars have also pointed out that the theory fails to fully explain capability of processes in firms because of its simplistic notion of the firm, its omission of the role of management, and its assumption that all firms are profit maximizers. In spite of such criticism, neoclassical economic theory has proved to be useful to explain the behaviour of large industrial firms. On the other hand, neoclassical economics has failed to explain the behaviour of those firms that do not have, as a prime objective, maximization of profits.

Pareto's Theory

Vilfredo Pareto (1909) was a contemporary of Alfred Marshall and contributed to the economic literature with his conception of general economic equilibrium. For Pareto, the notion of economic equilibrium was explained in terms of transformations of economic quantities. When Pareto referred to 'transformations', he focused on physical transformations and transformations in space and time. There is no distinction between transformations of physical or financial assets, as these are all considered by Pareto as part of the process of transformation. According to Pareto's theory, an individual transforms a good into another good that then may be traded. Pareto assumed that transformations at a fixed rate took place at constant relative prices (Tarascio, 1973).

Critics believe that most of the arguments within Pareto's work are not new and what it is new did not work when applied to nowadays economic life. The theory of general economic equilibrium had been already introduced by Walras in 1897 (Marget, 1935). Another flaw of Pareto's theory is that it assumed conditions of perfect competition. Thus, all the criticism of perfect competition applies to this theory. Some scholar`s stressed that

Pareto assumed that futures markets exist for every commodity and that prices of each market are perfectly forecast by every economic agent. Both assumptions are questionable in today's economic world (Allard, Bronsard & Richelle, 1989).

The Heckscher-Ohlin Model

The supply and demand curves introduced by Alfred Marshall were carried forward by the Austrian school. This created the grounds for the development of new theories with a different approach to the classical trade theory. A new model based on the principle of comparative advantage was developed as an alternative to the Ricardian model. The new model differs from Ricardo's theory in the factors identified as sources of competitive advantage. For Ricardo, labour was the only factor of production that influenced the opportunity cost of production. Nevertheless, the Heckscher-Ohlin (H-O) model developed by Eli Heckscher and Bertil Ohlin, attributes comparative advantage to all factor endowments such as natural resources, labour, and capital (Ellis & Pecotich, 2002).

Factors of production are considered by these authors merely as inputs for production. Therefore, nations would gain comparative advantages in industries making intensive use of the factors the nation possesses in abundance (Gray, 1991). The H-O model predicted that a nation would export the commodity that makes intensive use of the nation's abundant and cheap factor, and import the commodity whose production requires the intensive use of scarce and expensive factor. According to this theory developing countries would export labour-intensive goods and they would import capital-intensive commodities (Heckscher, 1991).

The H-O model is based in the following assumptions:

i. trade possibilities are larger between nations of dissimilar factor endowments;
ii. a condition of free trade exists;
iii. factors of production can move domestically but not internationally;
iv. different nations have similar tastes;
v. there are no economies of scale;
vi. perfect competition exists in all markets;
vii. there are no transportation costs; and
viii. all resources are employed.

Research on patterns of trade has shown that some of the assumptions of traditional trade theories are wrong and unrealistic (Sau, 1982). The Heckscher-Ohlin theory has been criticized for its broad generalizations based on what is self-evident. For example, the theory states that countries with scarce arable land will not export agricultural products and if they export capital intensive goods they must have capital and a skilled labour force. The critics claim that the theory is simply telling the obvious. Another flaw of the theory is that capital is treated as an endowment, thus, developed nations are assumed to be capital abundant without an explanation of how this capital was created. As history has demonstrated, nations are not endowed with capital, they have created it through different policies (Hudson, 1992). The theory also fails in recognizing the relationship between factor prices. According to Heckscher and Ohlin developed nations must be labour-scarce, because wages are higher. In reality wages are higher in developed nations because of the productivity of labour. The critics also point out that the H-O model omitted to take into account the relevant role of demand on market prices because it assumed all consumers having identical preferences. Another problem of the assumptions of the H-O model is that it completely ignored the possibility of different currencies across countries (Sen, 2005).

The Leontief Paradox

The H-O model was empirically tested by some authors who found the theory inadequate to explain trade flows across countries. The Leontief Paradox contradicted Heckscher and Ohlin arguments. Vassily Leontief (1954) found that exports from the US, which was the most capital-abundant country in the world, were less capital-intensive than import-competing goods. The methodology used by Leontief to test the H-O model was later improved by other authors. However, the results of the new tests support, in general, the original findings of the Leontief Paradox (Bowen, Leamer & Sveikauskas, 1987; Trefler, 1995).

Another problem of the H-O model is its assumption of perfect mobility. It is an error to assume that factors are perfectly mobile, or can be allocated between industries without a cost. When new factors are allocated to an industry they require a period of adjustment before becoming fully productive. This happens because all factors have some degree of industry specificity. During the period of adjustment, productivity levels are reduced and therefore trade volumes decrease accordingly (Gramm, 2002).

Changes in relative costs do not correspond with expected changes in market share as Hecksher and Ohlin suggested. Moreover, contrary to what the H-O model argues, trade between developed and developing nations has increased more than between nations of similar economic conditions. Another flaw of this theory is that it does not consider trade between the different national subsidiaries of multinational firms. Moreover, the theory is based on many assumptions that are not true in the modern world. It assumes that there are no economies of scale, that technologies everywhere are identical, that products are undifferentiated, that the pool of factors is fixed, and that skilled labour and capital do not move among nations (McCorriston & Sheldon, 1994).

The assumptions of the theory of comparative advantage worked to some extent during the eighteenth and nineteenth centuries when many industries were fragmented, production was more labour and less skill-intensive, and much trade reflected differences in growing conditions, natural resources, and capital. However, as many industries became more dependant on sophisticated technology and highly skilled employees, factor comparative advantage theory became obsolete (Yoshitomi, 1991).

Alternative Models to the Theory of Comparative Advantage

Since the Second World War period, many factors that were not considered by the theory of comparative advantage have played a relevant role. Among them are: economies of scale, product differentiation, consumers' power, and technological change. Nowadays access to abundant factors has lost importance against the technology and skills to process them effectively or efficiently. In addition, improvements in transportation systems have decreased the cost of exchanging factors among countries. Globalization has allowed firms to source components and materials worldwide, to locate activities in many nations, to take advantage of low cost factors, to form alliances, and to gain access to foreign markets. The easier access to factors makes the deployment of factors more relevant in determining international trade success than possessing the factors themselves. Competitive advantage based on factor costs is vulnerable to even lower costs somewhere else (Nilekani, 2006). If factor comparative advantage fails to explain national success in most industries, policies aiming to alter factor costs will often prove ineffective. For instance, measures of protection will have little effect where competition is based on quality, product development, and advanced features, rather than price.

Many theories have tried to address the flaws of comparative advantage. Some scholars tried to explain international trade based on economies of scale, which in theory would give a nation's firms the possibility of capturing a cost advantage (Helpman, 1981). However, it does not explain which nation's firms will gain scale and in which industries. Moreover, many internationally successful trade firms have not had the largest home demand for the products they export.

Linder's theory.

In order to overcome the constraints of the H-O model, authors developed new approaches. These new theories introduced imperfectly competitive markets into trade models. Linder (1967) included differing demand conditions as another factor influencing trade. This economist put demand at the centre stage as an explanation of trade. The H-O model had wrongly assumed that there are no differences in tastes and preferences between nations. Linder's theory has brought some light to explain intra-industry trade. However, his theory still has most of the flaws of the H-O model and therefore Linder's work has been neglected in the literature. Moreover, Linder's model failed to address important factors that play a relevant role on trade such as government policies in imperfect markets and the role of multinationals.

Gray's model.

Another line of thinking led by Gray (1973) attempts to explain trade based on the differences in technology between nations. Supporters of this theory claim nations will export in industries in which their firms gain a positive technology advantage. Again, this theory does not address the questions of which nation's firms will gain a technology gap and why some firms from certain nations preserve technological advantages for many decades.

The product life cycle theory.

Other scholars have concentrated on the role of a nation's home market in explaining success in trade. The best known theory is "the product cycle" of Raymond Vernon. This author analysed the US case and argued that early home demand for advanced goods was the trigger for American companies to become exporters. The theory puts emphasis on how the market demand can influence innovation. Vernon (1966) identified new factors such as

human capital, technical change, product cycles and research and development, which have influence on trade.

Vernon's theory (1971) has been proved to be a valuable framework to analyse the development of some industries. Trade and investment are considered by the cycle model when trying to explain commercial exploitation of foreign markets. The product cycle model relies on four assumptions:

i. products progress in a determined order following a development cycle;
ii. technological information is restricted;
iii. economic conditions affect production methodology; and
iv. the only aspect of product differentiation considered is price.

Vernon (1971) maintains that a new product will originate in the most mature national economic markets. This would occur because of the high spending power of these markets coupled with the general replacement of costly labour with capital investment. Then, both standardization and economies of production evolve, affecting the product. This is followed by an increase in market demand due to a price drop of the product. When the product has become established on the basis of these conditions, the following stage is product export. The theory claims that the product would be exported to those markets which offer the most rewarding profit margins. When factors of competitive advantage are present in the domestic market, then a successful export to nations is possible even after standardization. In the last stage of the model, as the industry margins decline some firms may leave the industry. For those companies that remain, product and cost differentials become the prime method for creating competitive advantage.

The critics point to the fact that the progress of many non-US companies has not followed the stages described by Vernon. It is also noted that multinational enterprises have had the ability to integrate the staged production cycle into one movement. The theory also fails to address many influencing variables with important effects on competitiveness. Nowadays the model is seen as unrealistic because it fails to take into account the progressive sophistication of global interaction (Sen, 2005).

New Strategic Trade Theory

In the early 1980s, a new trade theory was developed with the intention to address those aspects of the international economy that traditional trade theory leaves out. The new strategic trade theory introduces the following components:

i. economies of scale;
ii. product differentiation; and
iii. imperfect competition (Helpman, 1981).

Traditional trade theories wrongly assume that firms operate in perfect competition. They argue that nations will trade in order to exploit their differences. However, most trade occurs between developed nations with similar factor endowments. In addition, a great proportion of trade is inter-industry (trade of similar products) rather than intra-industry, as traditional trade theories would suggest (Deraniyagala & Fine, 2001).

Traditional trade theories also fail to address properly the role of technology. However, technological change has proved to be an important driver in international competition. Through the implementation of new technology some nations have nullified the impact of scarce factors. Another drawback of traditional trade theories is that they fail to integrate the impact that market institutions have on firms' behaviour (Deraniyagala & Fine, 2001).

The new trade theory looked at the role of foreign direct investment and technology for trade in a different way than earlier theory. The new trade theory put the emphasis on the product-life-cycle of technology-driven foreign investments and trade flows. According to the theory, innovations in developed countries led to the production of new products that are exported to the rest of the world. When products reach the mature stage, they start to be produced in less developed nations and eventually in developing countries. Critics have pointed out that there is no explanation of how the diffusion of technology happens and that there is no mention of the role played by multinational corporations in this process (United Nations, 1995).

The new strategic trade theory recognizes that there are other reasons for trade than the differences between countries. The theory shows that countries with similar factors of endowment can trade by specializing. Product differentiation has allowed firms to meet the

particular needs of niche markets (Helpman, 1981). The new trade theory approached economies of scale from a different angle. It argued that industries can benefit from relocating production activities in cost-efficient countries (Ethier, 1982). The theory also suggests that gains from trade are likely to occur in those successful industries which enjoy national-level scale economies. Gains are also possible for small economies that gain in scale by conquering new markets globally (Bhattacharjea, 2004). Critic have argued that this argument would only work in a supposed scenario with no trade restrictions in the world economy.

Arguments of the new strategic trade theory were discussed for policy formulation during the 1980s. Studies conducted in the US indicated that the role of history and accident were more relevant than resources in determining what a country produces and exports (Krugman, 1994a). Some scholars stated that the new trade theory has not departed far from the old models of free trade. They state that in spite of addressing some of the flaws of earlier theories, many limitations of the old theory can still be found in the new trade theory. For instance, both the traditional and new trade theory have failed to address the consequences of free trade in terms of development of the trading nations (Bhattacharjea, 2004).

To conclude, all theories critically reviewed above have failed to properly address the issue of competitiveness and trade. The main drawback relies on the fact that they do not recognize that changes occur in resource endowments, technological possibilities, income distribution, and consumer preferences. Most of them wrongly assume that resources consist of location-bound natural assets and that these resources are equally available for all firms to use in the production process. However, some of these assets such as, information, knowledge capital, and organizational capacity are, at least during certain times, proprietary to particular firms and therefore not available to all producing firms (Dunning, 1994).

The problem of all discussed theories is that they must be modified to address the needs of current times. However, most economists still believe that it is possible to explain today's border transactions by including some extensions to the old paradigms. Some scholars argue that economists are aware of old theories' limitations but they do not know how to amend them (Dunning, 1995). The reality shows that none of the theories has been able to

fully address the impact of foreign direct investment and intra-firm trade. A few scholars such as Charles Kindleberger, Richard Caves, Giovanni Dosi, Luc Soete, and Paul Krugman have tried to incorporate alternative disciplines in an attempt to explain international transactions (Bensel & Elmslie, 1992). Some of the new models incorporate some of the analytical tools of industrial and locational economics. However, they fail to recognize the importance of supply and demand, they omit taking into account the role of the firm as an organizing unit and the growing mobility of firm-specific assets, they fail to address the importance of created assets, and they underestimate the role played by national governments in the macro-organization of economic activity (Dunning, 1995). For instance, it is of public knowledge that the governments of Singapore, Japan, and Korea- through policies- have facilitated firms in order to create competitive advantages to address market needs.

Other authors had different approaches: the most recognized critics of old models have developed newer theories that are discussed below.

Competitive Advantage Theories

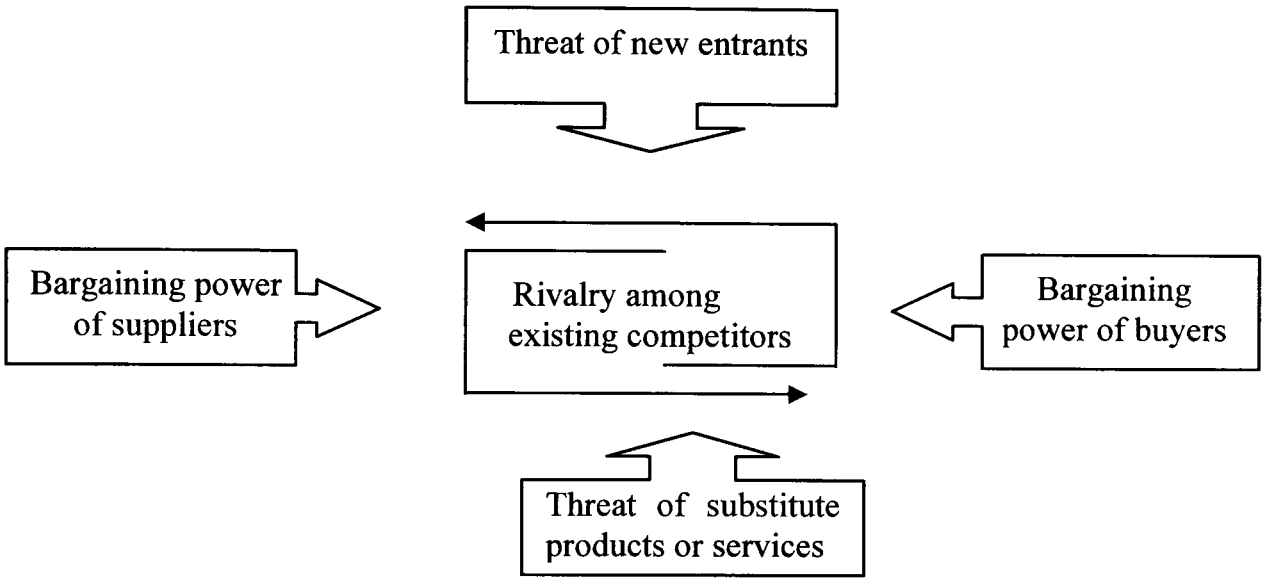
International trade theories provide useful elements to explain competitiveness in some sectors. However, business strategy theories are more likely to succeed in explaining why some industries are more competitive than others (Abbott & Bredahl, 1994). Different authors have presented different approaches on how to create competitive advantage, the main factors being: manufacturing practices, resource management, the creation of competencies, the creation of a competitive position, and organizational learning. The most recent approach has pointed to the RBV and core competences as the main determinants of competitive advantage. This view puts more attention on firm specific resources and how they can result in differential performances between firms (Foss, 1997). Among all theories on competitive advantage, Porter's theories (the five competitive forces and the competitive advantage of nations) and the RBV are the most influential in the area of competitive advantage.

The Five Competitive Forces Theory

According to Porter (1986), competitive advantage is created through a highly localized process. It embraces segmented markets, differentiated products, technology differences, quality, and new product innovation. Porter (1986) also maintains that it is in the industry

where the competence starts and where firms have to develop a competitive strategy that is both profitable and sustainable. His industry analysis is based on a simple model that uses five determinants. The application of this model appears to be powerful in identifying the nature of industry competition and developing the appropriate strategy to create competitive advantage.

Figure 2: The Five Competitive Forces



Source: Adapted from Porter (1986).

Threat of entry.

Porter considers that new entrants to an industry contribute new capacities, the will to gain a portion of the market, and (often) substantial resources. He also argues that when new entrants target an industry, the profitability might be reduced as prices can go down and costs can go up. According to the model, the threat of entry into an industry depends on both the barriers to entry and the expected reaction of existing competitors. When the barriers are high and the new entrant can expect strong retaliation from existing firms the threat of entry is low (Porter, 1980; Porter 1986).

Intensity of rivalry among existing competitors.

Porter considers rivalry as one of the strongest forces in shaping the characteristics of an industry. The theory identifies many forms of competition such as price competition, advertising battles, product introductions, and increased customer services or warranties. In most industries when one firm makes a movement, competitors react because firms are mutually dependent (Ergas, 1984; Porter, 1986).

Pressure from substitute products.

Porter (1986) suggests that the whole pool of firms in an industry is competing with those industries producing substitute products. The theory stresses that substitutes have a direct effect on the profitability of an industry as they limit the prices firms in the industry can charge.

Bargaining power of buyers and suppliers.

The last factor that Porter considers to be important in identifing the nature of industry competition is the bargaining power of buyers and suppliers. Buyers and suppliers are seen within the context of Porter's theory as direct 'agents' who try to use their power in order to get better prices, higher quality and more services at the expense of industry profitability.

The state of competition in an industry depends, according to Porter (1980), on the above five basic forces. The theory revolves around the interaction of these forces which would ultimately determine the profitability of the industry. Porter emphasises that the essence of a good strategy is to create a defensible position against the five competitive forces. In order to do that the theory points at two types of strategies: lower costs and differentiation. Porter states that successful companies must choose between one of these two strategies and therefore it would be possible to map firms into strategic groups which would tend to respond in the same way to external events or competitive moves. This is a particular aspect of Porter's theory that has been strongly criticized and it will be discussed below.

Strategy.

Strategy plays, according to Porter (1986), a vital role leading the way a firm performs individual activities and organizes its value chain. A theme stressed throughout Porter's work is the fact that different industries require different activities to be performed outstandingly to succeed. The theory states that firms can gain competitive advantage by using new ways to conduct activities, employing new procedures, new technologies, or different inputs.

Porter (1996) maintains that strategic competition should be understood as the process of perceiving new positions that will attract customers from established positions or draw new customers into the market. Porter considers that strategic positions emerge from the

following sources: producing a subset of an industry's products services; serving most or all the needs of a particular group of customers; and segmenting customers who are accessible in different ways.

There are many examples that have shown that choosing a unique position is not enough to assure a sustainable advantage. The sustainability of competitive advantage depends on: the source of the advantage, the number of distinct sources of advantage a firm possesses, and constant improvement and upgrading. Hannan and Freeman (1984) argue that once the advantage is created the firm must work on its improvement and upgrading, because sooner or later a competitor could replicate any advantage. These authors state that to keep changing is a huge challenge for firms, which generally feel more comfortable in a predictable and stable environment. According to them, the process of changing goes against the culture of the firm and therefore, outsiders are required to overcome the inertia.

Resource-based View Theory

The other most discussed theory on competitive advantage has pointed to the resource-based view as the main source of competitive advantage. The RBV view theory has been supported by those scholars who believe that competitive advantage is associated with firms' specific resources (Wernefelt, 1984; Foss, 1997). Supporters of this theory claim that the management of firms' specific resources is the main determinant of differential performances between companies. They argue that those companies capable of developing rare and non-substitutable resources and capabilities such as technical know-how, managerial ability, and organizational capabilities (routines and interactions), will achieve competitive advantage over competing firms (Barney, 1991; Grant, 1991).

At difference with those theories that focus on market structures, the resource-based view theory propose that the unique capabilities and assets of firms are the core factors which give rise to imperfect competition and extraordinary performance. The theory suggests that even though many firms use the same type of resources, only a few firms achieve sustainable success. The main contribution of the resource-based view model is that it explains differences in a firm's competitiveness that cannot be attributed to differences in industry conditions (Peng, 2001).

The resource-based view has been criticized because of its narrow scope that only considers the firm, leaving other factors that impact on competitiveness out of the model. It has also been criticised for its lack of clarity, as the model uses different concepts such as competences, resources, assets, and capabilities as the same thing (Foss, 1997). The theory also fails to clarify how firm's specific resources are developed. In fact some of the model supporters have stated that non-substitutable resources might be created in unique historical conditions, causal ambiguity, and social complexity (Barney, 1991). Again, there is not much clarification on how these resources are created, except for identifying the conditions that might be necessary for them to be created. Some authors have pointed out that one of the drawbacks of this theory is the assumption that there are homogeneous and immobile product markets. These authors state that as the competitive environment changes, resource values may change (Barney, 2001).

How to achieve competitiveness advantage is a central topic for strategic management. Those firms able to achieve competitive advantage will achieve superior performance. There is no consensus among scholars about how to achieve competitive advantage. However, many authors have pointed at Porter's theories and the RBV as the main sources of competitive advantage (Powell, 2001). Porter's other well-known theory, 'The Competitive Advantage of Nations', is discussed below.

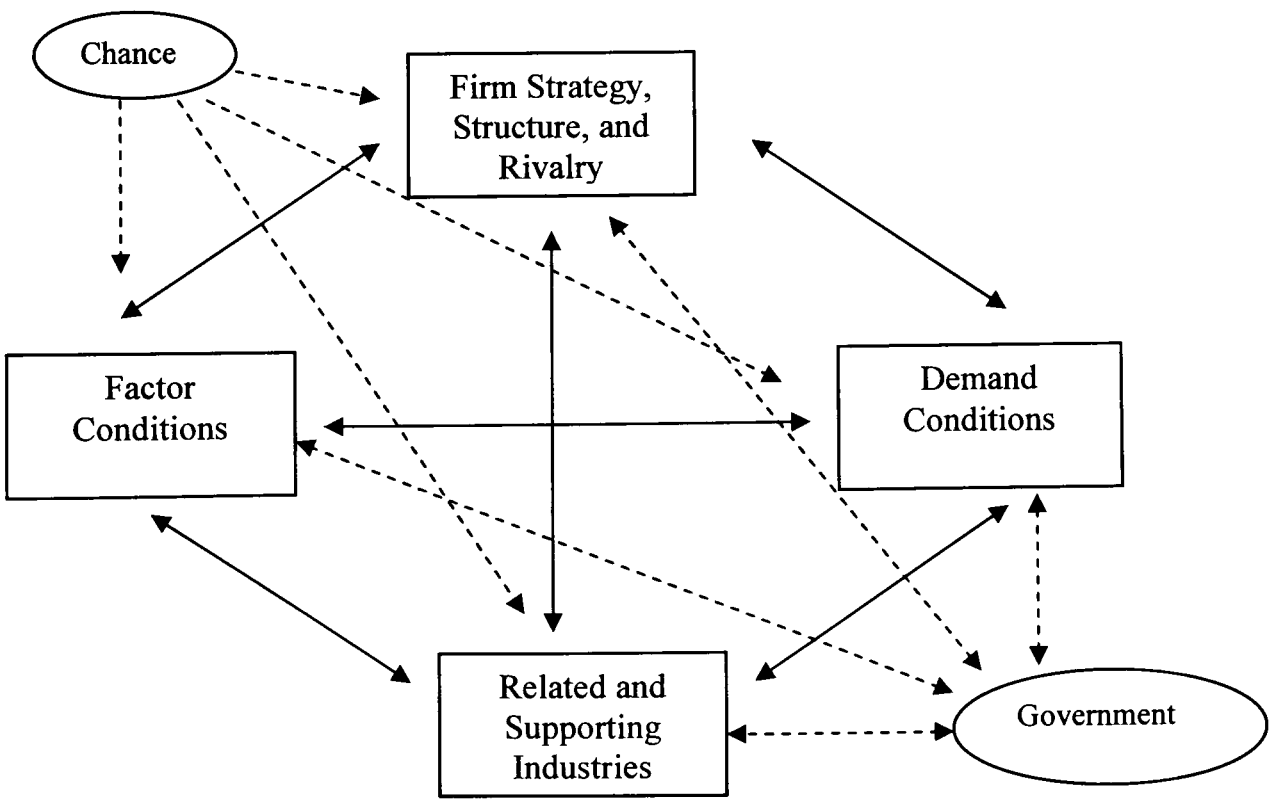
Porter's Theory of National Competitive Advantage

Porter (1990) with his work 'The Competitive Advantage of Nations' has been the main contributor to the development of a framework that explains those factors responsible for the success or failure of a firm. 'The Competitive Advantage of Nations' discusses the role that the nation's environment and governmental policies has on a firm's competitiveness. Porter (1990) maintains that a nation succeeds where the country's environment helps to develop the 'proper' strategy for a particular industry or segment. National factors affecting the possibility of pursuing a particular strategy include: norms of behaviour that shape the way firms are managed, the availability of skilled labour, the nature of home demand, and the goals of local investors. Porter's (1990) main objective is to explain the way in which a firm's domestic environment shapes its competitive success over time and why some nation's industries and firms succeed at international trade where others fail.

Porter (1990) emphasises that developing a competitive advantage in industries demands continuous improvement and innovation. According to him, nations succeed where the local environment pushes firms to take risks and to invest in new strategies for competing. To pursue this kind of strategy demands having sophisticated technology, skills, and the financial resources to continuously invest. When these sources are present nations will succeed in pursuing the right strategy. Nations will also succeed in industries where their home base advantages are valuable in the international arena (Hood & Vahlne 1988). According to Porter (1990) the nation's 'right' environment, that supports the creation of competitive advantage, is based on the attributes included in a national 'diamond' model based on certain determinants. Even though Porter's approach uses the firm as the centre of analysis he also takes into account the role that exogenous factors have on firm's competitiveness (van Duren, Martin & Westgren, 1994).

The main determinants embraced by Porter's (1990) 'diamond' are: factor conditions; demand conditions; related and supporting industries; and firm strategy, structure and rivalry. This model is then expanded with the inclusion of another two determinants (the role of government and chance) that address exogenous forces.

Figure 3: The Complete System



Source: Adapted from Porter (1990).

Porter (1990) claims that the success or failure of a specific industry is a result of the interaction among all 'diamond' determinants and that each determinant can be influenced and influences the conditions of chance and government policy. As in his previous work, Porter (1990) stresses the importance of competition as firms benefit from having aggressive home-based suppliers, strong domestic rivals, and demanding local customers. The theory suggests that firms would gain competitive advantage if their nation supports the accumulation of specialized assets and skills, if they have access to ongoing information, and if the goals of their personnel support intense commitment and sustained investment. The dynamic of a nation's environment is also an important factor in encouraging firms to upgrade and widen their advantages over time. Porter (1990) argues that competitive advantages that are based on lower-order advantages are possible when the industry succeeds only in one or two determinants. This kind of advantage is difficult to sustain because it may shift rapidly and global competitors can circumvent it. Conversely, higher-order advantages are created throughout the 'diamond' and are very difficult for foreign rivals to nullify or replicate (Porter, 1990).

The main determinants of Porter's (1990) system which are described below embrace some notions that were previously discussed in a similar way by other authors. For instance Ergas (1984) discussed the role of rivalry; Leigh (1987) discussed the concept of firm strategy; Ravenscraft and Scherer (1987), and Keegan (1989) delved into how to achieve competitiveness in foreign markets; Clutterbuck and Crainer (1988), Lieberman (1988), Campbell (1985), and Abernathy and Hayes (1980) all contributed to the notion of factor conditions; and Cooper (1986), and Thomas (1989) discussed the notion of the role played by the government in achieving competitiveness.

Those authors that have applied the concepts of Porter's (1990) theory to analyse the competitiveness of industries and segments in different countries include: Thurley and Wirdenius (1991), Lockwood (1991), Van den Bosch and Van Prooijen (1992), Dunning (1993), Allan (1993), AI-Awadh (1996), O'Shaughnessy (1996), O'Connel and Clancy (1999), Peart *et al.* (1998), Davies (2001), Oz (2001), España (2004), Bridwell and Kuo (2005), D'Souza and Peretiatko (2005), Sledge (2005), and DeWitt, Giunipero, and Melton (2006). The studies of these authors are reviewed below under 'Prior Work on Porter's Theory of National Competitive Advantage'.

Factor conditions.

For Porter (1990), human resources, knowledge resources, physical resources, capital and infrastructure are the main factors of production influencing the competitiveness of firms in any industry. Porter's argument is that an industry achieves competitive advantage when it has low-cost or high-quality factor conditions that are relevant to competition in a particular industry. The role of factors in creating competitive advantage must take into consideration how efficiently and effectively they are deployed. Nowadays human resources, knowledge, and capital factors can move among nations. Therefore, factor endowments will not be an advantage if they leave (Connolly, 1998).

Porter (1990) divides factor conditions into basic and advanced factors. Basic factors relate to those factors that are inherited or that can be created with small investments. These factors can be deployed in a wide range of industries, support limited types of advantage, are available in many nations, and are easy to nullify. Examples of basic factors include natural resources, climate, location, unskilled labour, and debt capital. On the other hand, advanced factors are those that they are created through a large and continuous investment in both human and physical resources. These factors tend to be more specialized, provide more decisive and sustainable bases for competitive advantage, and require riskier private and social investment. Advanced factors include modern digital data communications, infrastructure, highly educated personnel such as graduate engineers and computer scientists, and university research institutes in sophisticated disciplines. Porter states that a nation's success will be guaranteed not through the creation of advanced factors but the stimulus to continuously upgrade the needed factors

Demand conditions.

Porter (1990) gives significant attention to the determinant of demand conditions in his 'diamond' framework. He believes that home-demand conditions play a considerable role in shaping the rate of improvement and innovation of a country's industries. The theory points at three attributes of domestic demand that affect competitive performance:

i. Composition of home demand. When domestic demand gives firms an idea of future buyer needs, then the industry will have an advantage against foreign competitors. Demanding buyers stimulate firms to keep improving and to move into more advanced segments, often upgrading competitive advantage in the

process. Another advantage of having sophisticated buyers is the fact that they are more eager to adopt new products and services that later on will be demanded elsewhere giving national firms the chance to anticipate buyer needs of other nations. The segment structure of home demand is another aspect of the composition of home demand that affects competitive advantage. A nation's firms are more likely to gain competitive advantage in those global segments that represent a highly visible share of home demand but represent a less important share in other nations.

ii. Demand size and pattern of growth. For those industries where economies of scale are present, a large domestic market can lead to competitive advantage by fostering the industry to invest in technology development, large-scale facilities, and productivity improvements. Also, the presence of a large number of buyers, a rapid growth rate of home demand, and early home market saturation further spurs industry innovation. However, the large home demand for a product will not lead to a competitive advantage unless is demanded by segments in other nations.

iii. Internationalization of domestic demand. Porter claims that multinational local buyers and the transmission of a nation's preferences to foreign consumers is another determinant that helps an industry to achieve international competitiveness.

Related and supporting industries.

Porter's (1990) theory emphasises that firms that succeed internationally usually have national suppliers or other related industries which are also competitive in the international arena. He argues that the presence of competitive national suppliers helps industries to develop competitiveness through: the access to the most cost-effective inputs; close working relationships between firms and suppliers which helps innovation; and more coordination between firms and suppliers in product development. The theory states that home-based suppliers lose importance when the inputs do not have a relevant effect on innovation or on the performance of an industry process. In this case inputs can be sourced from foreign nations.

Related industries refers in Porter's theory to those industries which share activities and that can provide ideas which can help to achieve international competitiveness. The author maintains that information flows more easily between related and supporting industries located in the same region than with foreign industries. National success in an industry is

more likely to happen when the nation entails competitive advantage in a number of related industries (Porter, 1990).

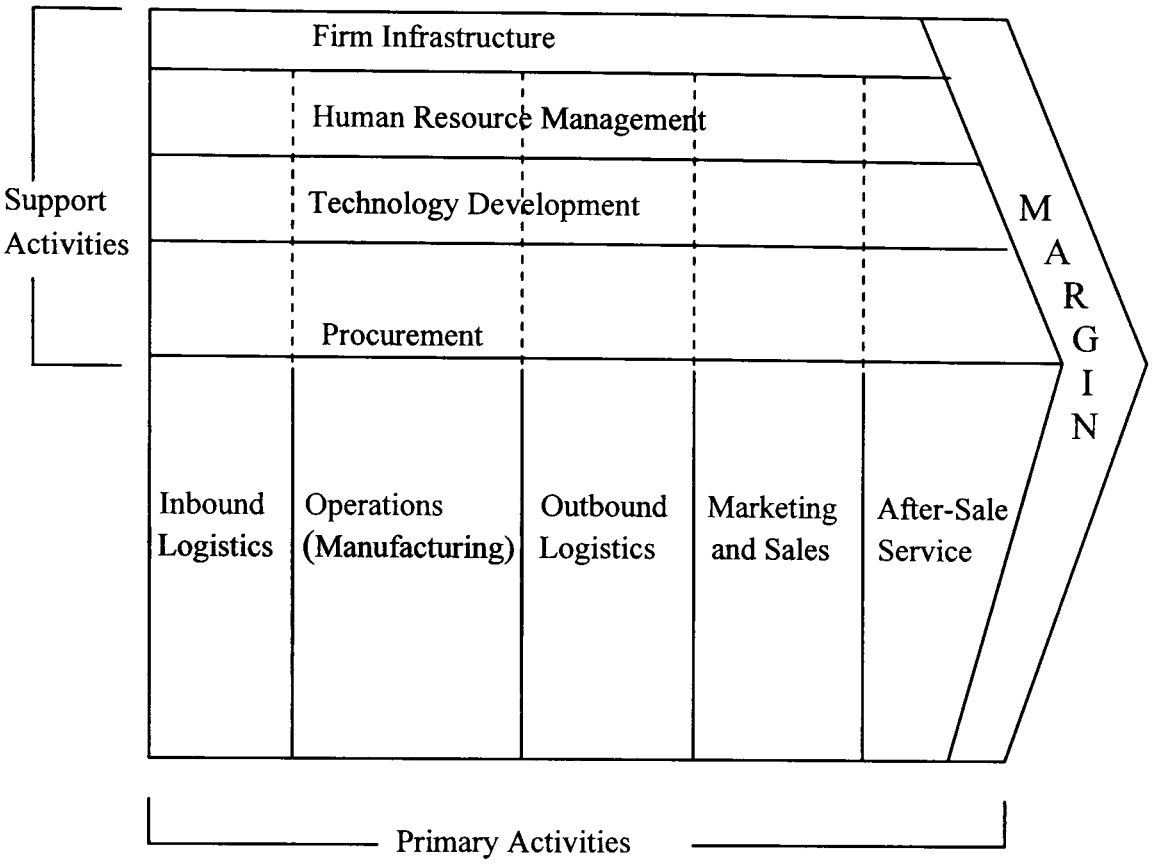
Firm strategy, structure and rivalry.

The fourth determinant in which competitive advantage is sustained in a particular industry is the context in which firms are created, organized and managed along with the nature of domestic rivalry. Porter's (1990) work suggests that the way firms are organized and managed is influenced by the domestic environment and national policies. He believes that nations are likely to succeed in industries where management practices favoured by the national environment fit with the industries' sources of competitive advantage.

Porter argues that nations' differences in managerial approaches and organizational skills, both relevant for creating competitive advantage, stem from a wide range of unique factors from each nation. The most important are: goals of individuals, attitudes toward authority, norms of interpersonal interaction, attitudes of workers toward management and vice versa, social norms of behaviour, professional standards, and the attitude of management towards risk taking. All these factors stem from the educational system, social and religious history, and family structures (Porter, 1990).

As in previous work Porter (1990) stresses that a firm can gain competitive advantage when it offers comparable buyer value but runs its operations at a lower cost, or when it creates a product identified as unique and commanding a premium price. The firm's strategy may help firms to achieve competitiveness through the way firm's operations are conducted. The theory points at the optimization and coordination of a firm's operations as the way to create competitive advantage. The pool of activities performed by a firm in a particular industry can be grouped into categories in what Porter calls the value chain. According to him all activities in the value chain contribute to buyer value and therefore, the management of the value chain is a source for competitive advantage creation.

Figure 4: The Value Chain



Source: Adapted from Porter (1990).

The theory stresses that the firm's strategy must also consider generic strategies. Generic strategies are approaches to superior performance in an industry. There are plenty of approaches as every firm is unique and the best strategy for a given firm must consider its particular circumstances. However, at general level Porter (1990) identifies four consistent generic strategies for a firm to compete in an industry. These generic strategies are: overall cost leadership, cost focus, differentiation, and focused differentiation. Porter claims a firm must choose a position and plan a strategy accordingly. The worst scenario is to pursue different strategies or to be stuck between strategies.

A theme stressed throughout Porter's work is the intensity of domestic rivalry that is strongly associated with the international competitiveness of a nation's industry. When there is vigorous domestic competition firms are pushed to innovate and upgrade, to improve quality and services, and to create new products and processes. In closed economies, monopolies are profitable but in global competition they have been shown to lose competitiveness against firms coming from more competitive environments (Ergas, 1984). Another positive side of domestic rivalry is the stimulus to create a range of products and services that cover many segments. This process enhances innovation and

provides a defence against foreign penetration. The national industry is benefited when some avenues for entry by foreign competitors are removed. Local firms copy the good ideas and the stock of knowledge and skill flows in the national industry increase as personnel move among firms (Porter, 1990).

Porter considers that an economic reason is not the only factor pushing domestic firms to improve. For instance, pride is a very important determinant for many local firms, which fight not only for market share but also for people and prestige. When there is strong local competition firms are forced to sell abroad in order to grow and gain efficiency and higher profitability. When there is no strong domestic competition firms tend to rely on the home market. It is rare to find firms that have developed the competitive advantages necessary to succeed abroad, in an environment with little domestic rivalry (Porter, 1990).

Chance events.

The other external determinants that complete the diamond are chance and government. Chance refers to those events that firms cannot control but can influence competitive advantage. Examples of chance events are: technological breakthroughs, inventions, wars, a shift in exchange rates, discontinuities in input costs and so on. Porter (1990) maintains that chance events change the rules of the game because they nullify advantages of former competitors and create new market conditions. Firms with the ability to adjust to the new environment will achieve competitive advantage.

Government.

Government policy can affect the 'diamond' system and as a result the competitive advantage of a nation's industries. In like manner, government can be influenced by the other four determinants of the system. Porter (1990) argues that the government can help to improve competitive advantage but it cannot create it by itself. He points out that a good government policy toward a nation's industry should:

i. Stimulate dynamism and upgrading.
ii. Create the right environment to encourage firms to upgrade competitive advantages and to penetrate more advanced segments.

iii. Support the ability of the nation's firms to enter new industries where higher productivity can be achieved compared to less productive industries and segments (Porter, 1990).

Porter (1990) maintains that the rate of upgrading in an economy is a function of the improvement of quantity and especially quality factors. In order to achieve high productivity firms must have access to specialized human resources, scientific knowledge, economic information, infrastructure, research, and other factors of production. The government can play a role enhancing the quality of these factors.

The dynamics of national advantage.

The preceding sections described the effect of single determinants in contributing to national advantage. However, the effect of one determinant usually depends on the state of others. Porter (1990) suggests that sustained competitive advantage relies on the combination of advantages in many areas, creating an environment, which is difficult for foreign competitors to replicate. For instance, domestic rivalry and geographic industry concentration convert the "diamond" into a system. Domestic rivalry promotes upgrading of the entire national "diamond" and geographic industry concentration magnifies the interactions within the diamond.

Porter maintains that nations are successful in the international arena when they possess advantages in the "diamond". Advantages in the entire "diamond" are not necessary when competing in natural resource-intensive industries or industries with low levels of technology. In these cases factor costs are the main determinant of competitiveness. However, competitive advantage in more sophisticated industries rarely results from one single determinant. For these industries the combination of many determinants leads to the creation of the conditions necessary for a firm to succeed internationally.

It is very common to find internationally successful industries or clusters of industries located in small geographic areas within a nation. According to Porter, the concentration of domestic rivals creates a fertile environment for suppliers to settle in the area. When this level of concentration occurs, customers are usually sophisticated and the region becomes a unique environment for competing. A high level of geographic concentration spurs efficiencies, specialization, improvement, and innovation. The reasons for this to occur are:

closely located rivals have a higher level of competition, universities located nearby will respond faster to needs of the industry, suppliers located close will be best positioned for interchange and cooperation, sophisticated customers located nearby provide information about emerging needs and technologies and will demand superb performance, and talented people will be attracted (Porter, 1990).

Another factor that Porter (1990) identifies as important to competitive advantage is globalization. Globalization and increasing global trade has made the differences in national competitive advantage between nations even larger. The process of internationalization has forced industries to compete with the world's best rivals. Over time, national advantage has concentrated in particular segments of industries. Porter believes that productivity in nations is closely linked with the capacity of a nation's industry to upgrade itself over time. The continuous creation of sophisticated competitive advantages in established industries is, according to the author, the best way to compete successfully in more sophisticated segments.

Criticism and Recognition to Porter's Theory

This section will present the academic critique of Porter's book, The Competitive Advantage of Nations since its publication in 1990. Most of the studies reviewed argue that in spite of Porter's work being enormously rich in its range and scope it fell short of some of the claims made for it. That failure arose from a number of sources discussed below.

Porter (1990) claims that a firm must choose between competing on the basis of value added for customers (differentiation) or at the lowest cost (cost-based leadership). Professor Michael Valos conducted a study on 314 Australian businesses to test Porter's (1990) prescriptions of company strategy. He found that a combined strategy of differentiation and cost-based leadership proved to be the most successful strategy. 73 out of the 314 businesses studied combined strategies effectively. Therefore, Valos argued that Porter's claim (1990) that a company should choose only one strategy is incorrect (James 1998).

Thurley and Wirdenius (1991) and O'Shaughnessy (1996) recognize the contribution of Porter's competitive advantage theory but maintain that his theory is weakened because it does not give enough attention to cultural factors. The critics see Porter's (1990)

interpretation of the cultural dimension as simplistic. National stereotypes of different countries such as Germany, Italy, Japan, or Switzerland are defined without the type of empirical support necessary for statistical generalization. The critics also see Porter's (1990) assumption that national culture is something unchangeable as too simplistic. The authors stress that the role of national culture might be more important in determining national competitive success and Porter (1990) avoids addressing it in depth.

Davies and Ellis (2000) have reservations about the research methods followed by Porter (1990). According to them Porter's hypothesis are not tested and there is no indication of how the cases were selected. They also claim that the four integrants of the 'diamond' complemented by chance and government are so broad that they include everything that might contribute to develop competitiveness, thus identifying nothing as particularly relevant. Finally, the review by Davies and Ellis (2000) found evidence that Porter's argument of clusters is irrelevant for many industries in different countries. They found several studies of successful industries in Netherlands, Hong Kong, or Japan where clusters were shallow or nonexistent (Jacobs & De Jong, 1992; Suzuki, 1994b; Davies, Whitla, Kwok, 1995).

Other authors have pointed out that despite the value and global recognition of Porter's (1990) approach there are a number of shortcomings. The critics argue that Porter's (1990) theory lacks predictive capability, it is complicated to identify the large number of variables impacting on industry competitiveness, and it fails to describe a process to modify an industry-competitive environment. They have also criticized the model's underestimation of the importance of the globalization of production and markets, and its failure to adequately address the topic of foreign owned firms (Dunning, 1993; Peart, Hatch, Masia & Binedell, 1998).

Krugman (1994b) and Francis (1995) believe that Porter's (1990) focus on national competitiveness might lead governments to erroneous policies. According to these authors the real problem is located at the micro level, inside the firm, with management practices playing a relevant role. Thus, they believe the grand strategy proposed by Porter (1990) is not enough to ameliorate those problems that are internal to an industry.

Porter's (1990) arguments are mainly formulated from case studies of developed nations. All his theory may work in developed countries but there is no certainty that it would work in developing economies because Porter's theory does not address certain aspects that might affect competition in developing nations (Bellak & Weiss, 1993; Hodgetts, 1993). There is no room in Porter's model (1990) to examine nations confronted with enormous economic, social, and political problems. This is the scenario of most economies in Latin America, Africa, Eastern Europe, and Asia. Similarly there is no mention of the impact of the International Monetary Fund on indebted countries (Aktouf, Chenoufi & Holford, 2005).

Grant (1991) assessed whether Porter's (1990) theory provides a satisfactory answer to the following question: Why do some social groups, economic institutions, and nations advance and prosper? In doing so, the author points to the main contributions and flaws of the book. He stresses that the main contribution of the book is in expanding previous theories of international trade to better explain observed patterns of trade between developed nations. For instance, Porter's (1990) meticulous analysis of factors of production is a considerable advance on the theoretical analysis associated with Heckscher-Ohlin models. In the same way, Porter's (1990) analysis of the effects of domestic demand conditions on national competitive advantage extends prior analysis associated with a large home demand. Moreover, Grant stresses that one of the strengths of Porter's (1990) analysis is its ability to span three levels of aggregation: the firm, the industry, and the nation. However, he considers that there are some low points in Porter's (1990) theory. For instance, he points at the lack of clarity of some of its arguments. When Porter (1990) refers to the upgrading of competitive advantage he fails to consider the role played by sophistication in technology, skills, and customer relationships. Moreover, sustainability, factor complexity, and productivity are not perfectly correlated as Porter (1990) suggests. The links between upgrading of competitive advantages and national economic development are also not very clear. Canada, at the factor-driven stage, is one of the world's most prosperous nations. There is also inconsistency as the analysis of competitive advantage moves from the industry to the national level. Porter (1990) assumes that firms' increase of competitive advantage translates into increasing national productivity. This assumption is not always true. Since 1985, dollar depreciation coupled with wage erosion has improved US competitiveness in some industries; however, these developments have not been always translated into an increase of national productivity and living standards.

Yetton, Craig, Davies, and Hilmer (1992) discussed the validity and relevance of Porter's Theory of National Competition as applied to Canada, New Zealand, and Australia. The researchers, using empirical findings, argue that the industry case studies used by Porter (1990) for New Zealand and Canada have no strong diamonds. However, Porter (1990) fails to note this absence and to consider its impact on the theory. If neither New Zealand nor Canada have strong diamonds, then their economies must be compromised. Clearly this is not the case and Canada has shown a strong and improving economic performance. The critics conclude that either the negative effects of the lack of diamonds are simply assertions, or if the Canadian industry were a test of the diamond, the theory would fail. In the last part of the study Yetton et al. (1992) assessed the application of Porter's theory on the Australian economy. Porter's theory stresses the importance of having firms and industries that export a considerable portion of their output, as they will provide the resources for national economic prosperity. However, this export-based approach applied in Australia's case would fail to identify those successful manufacturing firms that do not export. These are multi-domestic organizations that produce goods in the location in which they are to be sold. Therefore, these firms compete when locating production facilities in the markets in which they sell. For them, overseas direct investment is a much better parameter to measure international competitiveness than exports. Due to the lack of attention of Porter's (1990) theory to offer insights for resource-based or multi-domestic industries, the critics conclude that Porter's thesis has limited application for Canada, New Zealand, and Australia.

Another flaw of Porter's approach (1990) to competitiveness stems from his assertion that the group of successful firms for whom the country is the home base determines a country's prosperity. The findings of Chia (1994) show that in the case of Singapore Porter's (1990) argument does not work. Singapore is a country that has made much effort to attract foreign direct investment. If Singapore's prosperity was measured according to the activities of firms for whom Singapore is a home base, then its residents would be poor, but this is not the case.

Prior Work on Porter's Theory of National Competitive Advantage

This section presents a review of the main authors that have used Porter's theory of National Competitive Advantage in different scenarios and countries.

Lockwood (1991) studied the main variables affecting the competitive advantage of the European (France, UK, and Germany) construction industry. This was examined using Porter's (1990) 'national diamond' of competitive advantage. The unique characteristics of construction and the relative distinction between nations is successfully accommodated within the research model to show 'how, why, where, and when' to undertake internalization. Therefore, Porter's (1990) framework has proved to be a good tool for the assessment of competitive advantage within the European construction environment.

Oz (2001) used Porter's (1990) model of competitive advantage to analyse the international success of the Turkish construction industry. The application of the 'diamond' framework allowed Oz (2001) to identify the reasons why the Turkish construction industry has created competitive advantages. It also provided an understanding of why Turkish contractors have succeeded in international markets where contractors from other developing countries failed. Oz (2001) author concludes that Porter's 'diamond' framework works properly in a developing country as Turkey.

Van den Bosch and Van Prooijen (1992) used Porter's model of the national 'diamond' to analyse the implications of different national environments for strategic management. The study focused on European Nations and particularly on the impact of national culture. Porter (1990) mentions national culture as one of the relevant factors in the competitive advantage of nations. Nevertheless, his theory has been criticized for not including national culture in the descriptive framework of the national environment. This research tested- through the dimensions of Hofstede- the impact of national culture on every determinant of Porter's (1990) diamond. According to the findings of the study, national culture works through the determinants of Porter's 'diamond'. However, the authors stress that not enough attention has been given to the role of national culture in Porter's framework because the national diamond rests on national culture.

Allan (1993) conducted research in three growth sectors of the Scottish economy (plastics, oil and financial services) with the aim of testing the validity of Porter's model as a conceptual framework of growth. According to the findings of the research Porter's (1990) model did appear to have some limitations in explaining some aspects of sectoral and firm growth in all three sectors. Alternative models largely based on Porter's (1990) framework were developed to address its limitations.

España (2004) applied different theories of competitive advantage to explain the commercial success of the Brazilian aircraft manufacturer EMBRAER in global markets. Among all the theories of international trade only Krugman's New Trade Theory and Porter's 'diamond' of National Competitiveness explained, to some extent, the company's success. Porter's (1990) model seems to partially explain the success of the Brazilian aircraft industry. Even though, most of the determinants of Porter's (1990) competitive advantage were present, domestic rivalry termed many times by Porter as a relevant determinant of successful firms in global competition was absent in the Brazilian case study.

Davies (2001) studied the South African manufacturing industry with the aim to develop a model to overcome the constraints that limit competitiveness in South Africa. Porter's (1990) model of competitive advantage and in particular its approach to clusters as a mean for enhancing competitiveness was applied to the South African manufacturing industry. The study's findings stress the appropriateness of Porter's (1990) framework to identify relevant factors that impact on competitiveness. The study concluded that the cluster approach is a strategy with strong potential to position South African manufacturing firms in the global arena.

Bridwell and Kuo (2005) analysed the computer industry in China and Taiwan using Porter's four determinants of National Competitive Advantage. They discuss Porter's 'diamond' of national advantage and the role of government in both nations. Using Porter's arguments, the authors have brought light to the future capabilities of the computer industry in China and Taiwan as well as the potential of both countries to compete globally.

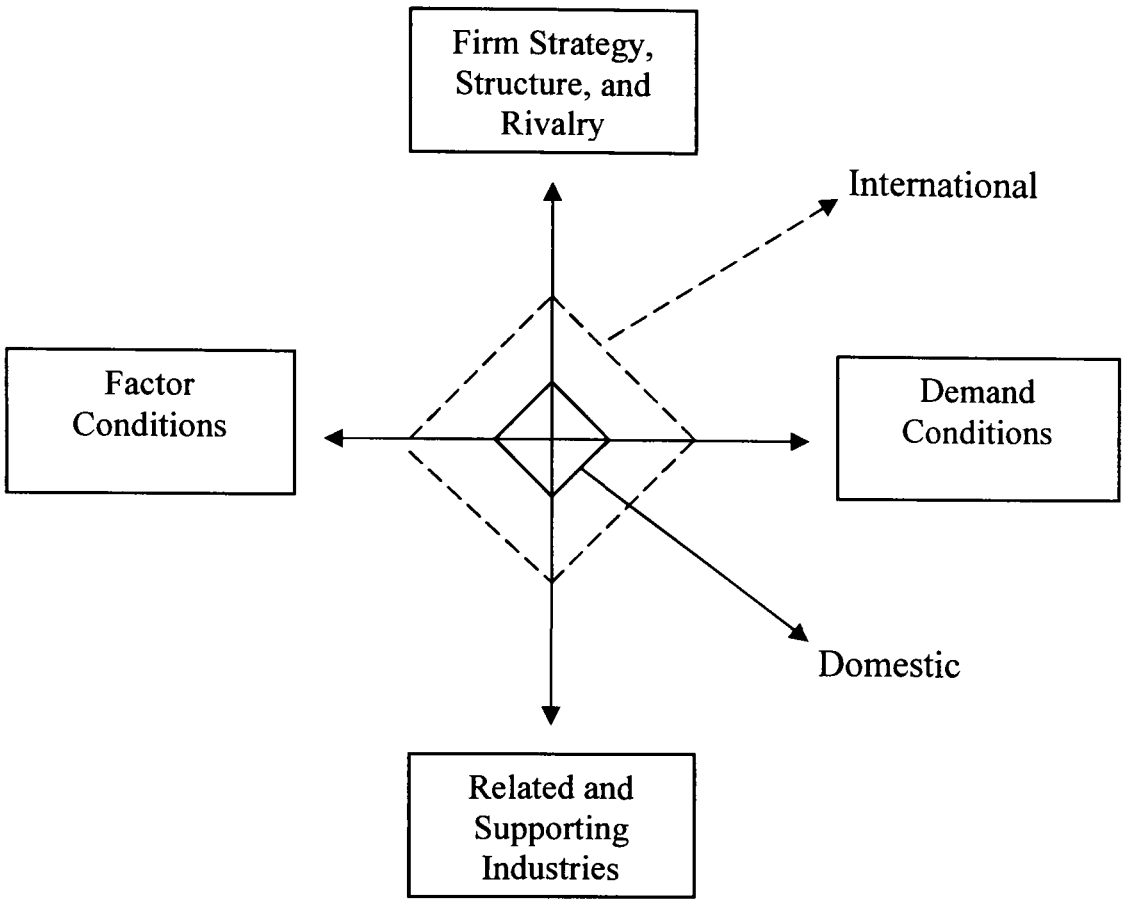
Sledge (2005) tested Porter's theory of The Competitive Advantage of Nations in the automotive industry using data collected from fifty automotive companies belonging to eight different nations. The four forces of the 'diamond' were tested. To test the hypotheses, several regression equations were used. The study provided empirical evidence that the global automotive industry supports Porter's (1990) model that defines national competitive advantage.

Research undertaken by D'Souza and Peretiatko (2005), found that what makes Australia an attractive country for foreign investment is not supported by what the literature had stated. The authors particularly focused on Porter's (1990) four factors that determine national competitive advantage. One of the objectives of multinational companies is to create and sustain competitive advantage and therefore, Porter's (1990) thesis seemed to be a good predictor for the attraction of foreign investment. However, Australia scored low on the determinants of competitive advantage described by the 'diamond'. The findings show that the US multinationals with investments in Australia placed more value on the culture similarities between the US and Australia rather than on the determinants of competitive advantage described by The Competitive Advantage of Nations.

Extensions to Porter's Diamond Model

Some scholars have extended Porter's diamond theoretical framework, by incorporating multinational activities (inbound and outbound foreign direct investment), to explore sources of competitive advantage in industries belonging to small industrialized countries (Byoungho & Hwy-Chang, 2006). The extended model developed by Rugman and D'Cruz (1993) was termed the double diamond model and aimed to demonstrate the influence of US firms upon the Canadian competitiveness. In spite of this model being useful to explain some aspects of competitiveness in countries such as Canada and New Zealand, it cannot be successfully applied to other small open economies. This model was later refined by Moon et al. (1998) to fit with all small open economies. The generalized double diamond of Moon et al. (1998) emphasizes the role that domestically owned and foreign owned firms play for the economy of some countries.

Figure 5: The Generalized Double Diamond



Source: Adapted from Moon et al. (1998).

Those scholars that have used Porter's diamond argue that in small industrialized economies such as Korea and Singapore, internationalization plays an important role over the competitive determinants identified by Porter. According to them, sources of competitive advantage achieved by many firms span from their activities in different countries and therefore these international activities need to be incorporated into the diamond (Gereffi, 1999).

The Singaporean economy has been used as an example where Porter's diamond fails to fully explain the success of one of the newest industrialized countries. According to Porter's (1990) hypothesis Singapore is a production base for foreign multinationals attracted by favourable domestic factor conditions. Porter (1990) argues that factor conditions are not the prime factor to gain competitive advantage. In spite of this, Singapore has achieved success based on inbound and outbound foreign direct investment. In the case of Singapore specialized factors are provided by multinational corporations. This suggests that countries can gain competitive advantage taking advantage of specialized factors that are not created at national level (Moon et al., 1998).

The double diamond emphasizes the importance of internationalization, but does not introduce any novel concept. The process of internationalization and the importance of sourcing from abroad and coordinating international activities are extensively discussed in Porter's literature (Porter, 1990, 1996, 1998). Even though Porter identifies the role of internationalization, he does not include it as one of the competitive determinants in his model. For the supporters of the double diamond the main contributions of the extended model are: that sustainable value added in a country results from both domestically owned and foreign owned firms; and that sustainability requires a geographic configuration including many countries whereby firm specific and location advantages present in many nations complement each other. They argue that Porter's model works properly for countries that export from a home base cluster; however, it does not fully explain the competitiveness of small economies that have to be more concerned about international markets as they do not have large home markets (Brouthers & Brouthers, 1997).

In the same line as the double diamond Dunning (1993), and Bellak and Weiss (1993), and Cartwright (1993) proposed a regional multiple-diamond as the best explanation of how small nations achieve competitive advantage. These authors argue that in order to make Porter's (1990) model applied to all economies and not only to industrialized nations, its model should include the determinants of neighbouring countries. The model stresses that multinational firms have decentralized organizational structures that can benefit from national diamonds of many countries and therefore are not limited by the home base diamond attributes as Porter's suggest.

Finally, the most recent extension of Porter's diamond is the so called dual double diamond which adds human factors (as an independent factor from physical factors) to the incorporation of multinational activities (Cho & Moon, 2000).

The following table presents a picture of the evolution of theories on international trade and competitive advantage and summarizes key arguments.

Table 1: Selected Theories on International Trade and Competitive Advantage

Theory type	Theoretical emphasis	Credited writers
Classical Trade Theory		
Theory of absolute cost advantage	Nation's export those goods which have an absolute cost advantage compare to other nations. Introduces the concept of perfect competition. The success of a firm is associated to the division of labour and the demand for its products. Identifies the desire of individuals as the main driving force to achieve profitability.	Adam Smith (1776)
Theory of comparative advantage	Competitiveness is associated to labour productivity differences between nations. Introduces the concept of comparative cost advantage. The theory claims that: market forces would allocate a nation's resources to those industries where it is relative most productive.	David Ricardo (1817)
Neoclassical Trade Theory		
The supply and demand curves	Highlights the profit maximisation function at the firm unit. Introduces the concepts of supply-demand curve equilibrium analysis and a mathematical treatment of the price mechanism. Stresses the importance of the allocation of scarce resources to meet consumer demand.	Alfred Marshall (1890)
Pareto's theory	Introduces the concept of general economic equilibrium which is explained in terms of transformations of economic quantities. The theory claims that: through reallocation of goods or income for a set of individuals improvements can be made.	Leon Walras (1897) Vilfredo Pareto (1909)
Hecksher-Ohlin model	Expands the theory of comparative advantage by including all factors endowments such as natural resources, labour, and capital. Nation's will specialize in the production of goods that utilize their most abundant resources.	Eli Hecksher and Bertil Ohlin (1933)
The Leontief paradox	Contradicts Hecksher-Ohlin model by demonstrating that imports were more capital intensive than exports in the US.	Vassily Leontief (1953)
Alternative Models to the Theory of Comparative Advantage		
Linder's theory	This theory puts demand conditions at the centre stage of trade and competitiveness.	Staffan Linder (1967)
Product life cycle theory	Develops a cycle model to explain commercial exploitation of foreign markets. It also focuses on the impact of demand conditions on innovation.	Raymond Vernon (1966, 1971)
Gray's model	In this theory competitiveness is mainly associated to differences in technology between nations.	Gray (1973)
Helpman's approach	Explains international trade and firm's competitiveness based on economies of scale.	Elhanon Helpman (1981)

Theory type	Theoretical emphasis	Credited writers
New Strategic Trade Theory		
New trade theory	Introduces a new approach of the role of foreign direct investment and technology for trade. It is argued that industries gain from relocating activities in cost-effective countries. The theory also considers economies of scale and product differentiation from a different angle. It focuses on the product-life-cycle of technology-driven foreign investments and trade flows.	Wilfred Ethier (1982) Paul Krugman (1985) Aditya Bhattacharjea (2004)
Competitive Advantage Theories		
The five competitive forces	Claims that competitive advantage is created through a highly localized process. The success of a firm is determined by external factors, operational effectiveness and positioning in the industry.	Michael Porter (1986)
Theory of national competitive advantage	Incorporates concepts from traditional trade theory, new strategic trade theory, and the role of innovation. Discusses the influence that industry drivers and exogenous factors have on firm level competitiveness. Incorporates analytical tools of industrial and locational economics. It focuses on three levels of aggregation: the firm, the industry, and the nation. It acknowledges the role played by supply and demand, the mobility of firm-specific assets, and the impact of national governments. Expands the discussion on globalization, foreign firms, technology, cultural aspects, and customer relationships.	Michael Porter (1990)
The generalized double diamond	Extends Porter's (1990) theory by emphasizing the role that multinational activities play in the development of competitive advantage in small open industrialized economies.	Chang Moon, Alan Rugman, and Alain Verbeke (1998)
Resource based-view theory	This theory states that competitive advantage is associated with firm's specific resources. Imperfect competition is associated with extraordinary firm's performance. Entrepreneurship and resource heterogeneity are central for competitive advantage. Organizational capabilities provide competitive advantage if they are difficult to imitate.	Jay Barney (1991, 1995) Robert Grant (1991) Mike Peng (2001)

Discussion

The reason why some firms belonging to certain nations are more competitive than others in international trade is a very complex topic. Nowadays most countries increasingly find themselves more integrated into the global economy. In that scenario, the importance of

competitive advantage is enormous as trade agreements have forced firms to face competition from domestic and global competitors. In spite of the lack of consensus among scholars about how to create competitive advantage, the above theories and models help to identify key aspects and variables that impact on competition and trade.

In general, national macro-economic factors, such as government deficits, exchange rates, interest rates or currency strength, are pointed out by many theories as having a relevant role in competition. Nevertheless, there are examples of nations that have achieved international success in spite of adverse macro-economic conditions. The desire of individuals to maximize their profits, labour availability, and comparative cost advantage has also been identified as important factors in determining national and corporate competitiveness. However, in some nations with short supply of labour and high wages, firms have been able to gain competitiveness through automatization and redistribution of processes.

According to some theories, competitiveness depends on natural endowments. Therefore, nations rich in natural resources should gain competitiveness easier than those less fortunate on natural endowments. Yet, the lack of natural resources has not prevented firms from some nations such as Japan from achieving international competitiveness.

Many scholars have pointed at government policy as the main factor responsible for achieving national prosperity. The reality shows that economic success has been achieved by nations with either strong government control or limited government policy. Significantly, when governments have tried to improve the competitiveness of particular industries the results have often been negative in economic terms.

Finally, business management practices are identified by some models as key determinants for competitive success. Some authors argue that it is unrealistic to draw generalizations out of management practices because the same management approach would have very different outcomes in different industries from different countries.

Most traditional theories and models contain some 'truth'; however, they fail to account for many factors that are important to explain competitiveness in specific sectors. Therefore, none of them provide a satisfactory framework to explain how firms achieve competitive

success. The few models that take into consideration the firm's dynamics tend to oversimplify the process by which a firm achieves competitiveness. For instance, the classical economics approach does not give enough consideration to the role of individual firms, while the neoclassical approach, even considering some relevant aspects, forgets to consider other important determinants of competitiveness. Both of these theories have proved to be inadequate in explaining current patterns of international trade.

The new strategic trade theory has tried to amend some of the flaws of traditional theories introducing the concepts of economies of scale, product differentiation, and imperfect competition. In spite of addressing some of the flaws of former theories the new strategic trade theory is still imbued with many limitations of the old theory.

Among management theories, Porter's (1990) work and the RBV have been recognized as the most influential perspectives to explain competitive advantage and why some firms succeed where others fail.

The debate should look then at the real differences among these two models. The RBV theory focuses on the firm and claims that organizational capabilities can provide competitive advantage only if they are based on a collection of routines, skills and complementary assets that are difficult to imitate. This hypothesis has been widely discussed by Porter's work.

Porter's theory has the ability to acknowledge the impact of the industry without forgetting the role played by operational activities at the firm level. Therefore, Porter's model seems to provide a better framework than the resource-based view model for understanding the competitiveness of the Uruguayan broiler industry, as well as the firm's activities that have contributed to the development of this industry.

The benefit of Porter's theory is that it is not only about the analysis of industries and competitors but also about the activities within the firm. By concentrating only on the firm, the RBV model forgets to consider important industry factors that may affect the acquisition of resources to develop competitive advantage. Porter's theory has the advantage of looking at what happens inside the firm as well as what happens with the

industry and competitors which is essential to understand competitiveness. In summary. Porter's is a better model because embraces both the industry conditions and firm factors.

The model to be employed in this research must be able to overcome the constraints of traditional theories. The selected framework must be capable of explaining the success of industries from specific nations when competing locally and internationally. If possible, the model should have been based in commercial applications from many industries in different nations. This would give the model the capability to analyse nations with differing characteristics and to identify the determinants of competitive advantage in particular industries. In spite of its limitations, Porter's (1990) model of competitive advantage is the one that best meets these requirements. Porter's framework is particularly powerful in explaining and understanding competitiveness in an industry sector.

Porter's (1990) national 'diamond' is a comprehensive model that has the ability to incorporate concepts from traditional trade theory, new strategic trade theory, the resource-based view model, and the role of innovation introduced by Schumpeter (1934). Porter's 'diamond' explains how industries belonging to particular countries can achieve and sustain international competitiveness. His approach recognizes the influence that industry drivers and exogenous factors have on firm level competitiveness. The model views the firm as being in a symbiotic relationship with its environment in the sense that the actions of the firm's participants are closely associated with the resources, opportunities and constraints presented by the firm's environment. Porter's theory recognizes that the actions taken by the firm can contribute to changing the firm's environment. Moreover, Porter's approach has the advantage of being developed through the use of a broad array of empirical evidence. Traditional trade theories lack the depth of understanding of complex relations achieved by Porter thanks to the use of diverse case studies from ten different national contexts.

Another advantage of Porter's (1990) theory is that it seems to be the best model to address the needs of current times. Porter theory has the ability of incorporating analytical tools of industrial and locational economics. The application of the diamond framework to any industry allows identifying the most relevant variables that impact on industry competition and it is the only model that has successfully addressed three levels of aggregation: the firm, the industry, and the nation. It also recognizes the importance of supply and demand:

the role of the firm as an organizing unit and the growing mobility of firm-specific assets; the importance of created assets; and the role played by national governments. Moreover, none of traditional theories have properly addressed, as Porter does, the importance of globalization and foreign owned firms; the role played by technology; the importance of the cultural dimension; and the impact of customer relationships. The holistic approach of Porter's framework allows taking into account most determinants of competitiveness. On the contrary, the other theories/models assessed tended to consider only a few aspects of a firm's competitiveness. Therefore, Porter's (1990) 'diamond' provides the best theoretical framework to study competitiveness of particular industries in a wide range of cultural, spatial, and temporal contexts. From the critical review of the above theories and models Porter's (1990) 'diamond' framework is shown to be the best option to analyse the competitiveness of the Uruguayan broiler industry. In addition, because of its strong explanatory framework, Porter's model seems to offer the greatest potential to elaborate policy recommendations to improve the competitiveness of the Uruguayan broiler industry.

The generalized double diamond and the dual double diamond are extensions of Porter's (1990) hypothesis to explain competitiveness in small industrialized countries where internationalization has played a paramount role. In fact what the developers of Porter's extended diamond model have done is adjust Porter's (1990) framework to the particularities of some economies. As Uruguay is not an industrialized country and the industry under study has not been affected by internationalization, it seems more sensible to adjust Porter's (1990) model to the particularities of the industry targeted in this research, rather than adopting an extended model that was developed for industries operating in a very different environment. The generalized double diamond would be a good option to analyze the competitiveness of the Uruguayan broiler industry if one day MERCOSUR operates without barriers and international poultry firms are able to access the Uruguayan market. By then multinational activities should be incorporated into the analysis.

There are some studies that have used Porter's (1990) theory/model to analyse the competitiveness of industries and segments in different countries. However, in spite of Porter's (1990) theory being generally recognized there are very few studies that have tested the concept of national competitiveness based on the model. In light of this fact this

thesis will test Porter's model of The Competitive Advantage of Nations in Uruguay. There is no previous work that has 'tested' Porter's (1990) model in Uruguay. The researcher believes that further applications of the model to developing countries may clarify some of the aforementioned disputes in the literature.

The review of the theoretical foundations of competitiveness and competitive advantage will be used to identify weaknesses and strengths of the Uruguayan broiler industry. These findings will help to develop the best policy to improve the competitiveness of Uruguayan broiler companies against Brazilian and Argentinian poultry firms. Chapter 3 now follows, and explores the main characteristics of the poultry industry.

Chapter 3

An Overview of the World Poultry Industry and Its Rapid Growth

This chapter covers the main characteristics, trends, and evolution of the world poultry industry. The chapter is structured into seven main sections which critically review the literature on the following topics: expansion, innovations and globalization, trade, consumer perceptions, ethical issues and animal welfare, food quality and food safety, and the future evolution of the world poultry market.

A Brief History of Poultry Production

Up until the 20th century only a few thousand birds were reared globally. Then at the beginning of the 20th century the number of animals reared increased further to hundreds of thousands in North America and Europe. Poultry during the beginning of the 20th century was positioned as a seasonal delicacy with prices higher than other meat products. It was a product consumed mainly on special occasions like Sunday dinner, holidays and celebrations (Torrijas, 1966). Since then, geneticists, nutritionists, physiologists, and disease specialists have developed methods to improve breeding, feeding, managing and protecting birds against disease (Orozco, 1991). Genetic changes have been identified as the main factors in improving poultry production (Thornton, 2002). The application of new technology brought about a more efficient production of poultry products resulting in a reduction of the cost to the consumers at a time when the prices for most other consumer goods were climbing (Bird, Eggleton, Ernest & Pinkston, 1983). The new way of production together with the changes brought by capitalism transformed the poultry industry into a business with the capacity to supply mass-markets at a competitive price.

While many industries have evolved under the dominance and influence of individual outstanding figures the poultry industry, however, was the result of the effort of thousands of individuals. Most of them were pursuing economic benefits but they did not have any intention of creating the modern industry and did not imagine that chicken's impact would have an immense influence in diverse areas such as gastronomic, agricultural, religious, literary, economics, and even psychological (Buxade Carbo, 1995).

Early times

Chickens come originally from eastern Asia and Africa. Gallus gallus, the red jungle fowl, is the ancestor of all domestic chickens and still nowadays it can be found in the wooded areas of India and in Southeast Asia from the Himalayas to Sumatra (Lasheras Esteban, 1953). Its tightly muscled meat and the low weight of about two pounds show that the red jungle fowl was not originally domesticated to serve humans as an alternative source of food. Instead two of the cock's characteristics led to this animal to become a part of human's life. The first one is his habit of crowing at the first ray of the sun and the second one is his aggressiveness toward other unfamiliar males of his species. It was this characteristic that gave origin to the well-known sport of cockfighting (Atkinson, 2002). Some of the cock's habits caused many human males to identify strongly with them. Hens were identified on the other hand by their maternal and feminine behaviour. Because of these reasons chickens were seen as the most social of all birds, a mirror of human beings. Because of that, no domestic animal but the dog has so many symbolic connotations as the chicken does (Florez, 2001).

By the time of the Persian Wars (92 BC) chickens had spread from India toward the West and reached Greece. The Roma era found chickens throughout Western Europe. At that time Romans believed chickens were useful as diviners of the future. Chickens were so important that they could influence military decisions. Roman military leaders had the habit of offering a flock of grains to birds. If they devoured it, the general would go into the battle with confidence, otherwise he would often avoid the battle. During Roman times chickens were carried on ships not only because of their supposed divine powers but also because they were good providers of both fresh meat and eggs to the crew who otherwise had to rely on biscuits and salted meat. This is the reason why chickens arrived in the New World almost at the same time as Europeans did (Smith & Daniel, 2000).

Because of their self-sufficient nature, chickens, unlike other domestic animals, were not provided with feed or shelter. They had to make their own way by feeding with grain spilled by other animals, worms, and table scraps. Feed items were supplemented by foraging for grass, weed seeds, and insects (Agenjo Cecilia, 1964). These animals were able to produce eggs and meat at a very low cost on this kind of diet. These products have been an important source of high quality protein providing a good supplement for cereal grains, tubers, and roots as they can provide much of the energy into human diets. At that

time (1500s) egg and meat production were very seasonal. Most eggs were laid in the spring and as a result there was a great variation of prices making eggs inexpensive in the spring and quite expensive during the late fall and early winter. Chickens were ready to be marketed during the summer when they reached the optimal weight for slaughter. After the summer the available chickens were older and tougher. This seasonality created a considerable variation in chicken prices over the year (Agenjo Cecilia, 1964).

Up to the Nineteenth Century

It was not until the 1830s that the old way of production had its first change. At that time birds from China (Cochins) were imported as exotics into Britain and the US. These birds interested farmers both in the British Empire and the US. Because of that, farmers started to rear different breeds like Plymouth Rock, Wyandotte, Australorp, and Orpington (Hams, 1999). As a result almost each farmer had his own breed of chicken creating genetic chaos. This problem was then solved with the formation of associations aimed to set standards and develop chickens that could be relied upon to breed true. These organizations set up the basis for the development of a genetically reliable stock, which was then used to transform the chicken (Hams, 1999).

It was during the nineteenth century that poultry became more than a hobby. By 1890 there were many magazines devoted to poultry and Universities started to offer courses in poultry husbandry. The turn of the century found that the rearing of chickens, originally a sideline of the family farm, was a form of agribusiness. The first big change was the introduction of commercial produced chicks. Under traditional poultry husbandry those willing to start a flock had to either buy fertilized eggs from a farmer and incubate them or buy two hens and a cock. Then in 1887 the creation of an incubator that used hot water as a source of heat, which could handle four hundred eggs at a time, turned the raising of baby chicks into a business (Sykes, 1963). Thanks to the artificial hatcheries, poultry producers were able to start to supply the market all year around. This new technology was responsible for reducing price swings. The benefits of artificial hatcheries meant they were adopted at an amazing speed. From 1918 to 1928 the number of reared birds increased from few hundreds to more than ten thousands in the US. In addition more than a half of baby chicks came from artificial hatcheries. As the number of artificial hatcheries grew so fast the competition among them became fierce and the less efficient ones were forced out of the market. The remaining hatcheries were able to supply superior chicken breeds in

terms of food conversion. Artificial hatcheries were one of the main technological engines in turning chicken from a luxury product into an everyday affair (Gordon, 1996).

Modern Times

Another important change in the poultry industry happened during the early forties when there was a separation of egg farming from chicken farming. Former commercial broilers had been selected because of their capacity to lay great quantities of eggs. However, these birds were not very efficient in gaining weight. Therefore, hatcheries embarked on breeding new crosses for rapid weight gain. From that time hatcheries would use different breeds depending on whether the final output was going to be eggs or meat (Swotland, 1995). Egg farmers trying to reduce the cost of producing eggs introduced some changes to the traditional poultry husbandry. The first change was to begin confining their chickens, this saved a lot of time and energy that previously was destined for egg collection and also diminished the risks of predators. Due to confinement egg farmers increased egg production and consequently they were able to lower the prices for consumers. Since then the egg industry has witnessed a continuous decline in prices largely due to economies of scale. The industry went through a process of rationalization as the number of egg farms declined and the number of chickens in the remaining farms increased. Despite a reduction in the number of egg farmer's competition among survivors remained fierce (Swotland, 1995).

The increase in the number of chickens changed the traditional way of feeding. No longer could chickens be fed with table scraps, leftovers from other livestock or by picking on their own. Consequently, hundreds of companies were created with the purpose of producing feeds for broilers (Heuser, 1955). There was intense competition among these companies and the advances in chicken nutrition were remarkable. The short biological cycle of this species together with few ethical constraints applied to experimentation allowed researchers to develop the best understanding of nutrition among all domestic animals. Part of the accomplishments in the field of poultry nutrition was triggered by the application of the mathematical system, linear programming, and the development of computers. Diets formulated by linear programming were quickly accepted and therefore, more information was needed on nutrient composition. A lot of research was focused on the energy and amino acids requirements of broilers (Lopez Magaldi, 1994). The introduction of vitamin D on chicken rations was also among the developments that had a

major economic impact on chicken production. Chickens need sunlight to synthesise vitamin D. Before this vitamin was introduced, outdoor chickens were exposed to the uncertainties of weather, predators, and diseases. The adding of the purified vitamin D to the ration allows chickens to be raised indoors where temperature, diet, and lightening are controlled in order to achieve maximum weight gain (de Blas & Mateos, 1991).

Nowadays feed intake is recognized as the main factor influencing both body weight gain and feed conversion in meat-type poultry (Richardson & Mead, 2001). Apart from diet formulation, to keep a maximum feed intake is relevant in order to achieve the best rate of growth and efficiency of nutrient utilization. Feed intake is affected by both dietary and management factors. Dietary factors influencing feed intake include nutrient composition, feed formulation and feedstuff inclusion levels, and feed pellet quality. The relevant management factors are: feed management, water availability to the birds, environmental management, stocking density, and disease control (Ferket & Gernat, 2003).

Vertical Integration

As feed companies became more important within the poultry chain they started to be more involved with farmers, giving them advice not only about chicken nutrition but also about the best techniques of production. Subsequently, feed mills started to provide credit to farmers who would raise birds belonging to the feed mills in exchange for a fixed price per pound. This was the origin of vertical integration within the poultry food chain. Since then the poultry industry has been undergoing a process of both horizontal and vertical integration. Horizontal consolidation has also occurred due to the internal growth of firms plus the merger and acquisition of other firms competing in the same market. Vertical integration was the result of firms expanding upwards into processing, wholesaling, distribution, and retailing, and expanding downward into farm inputs (Percy, 2002). The development of the chicken industry has been accompanied by the increase of power of very large integrated producers. An integrated chicken production has facilitated the coordination of chicken raising processes by improving the efficiency of the poultry chain. This more integrated chicken production has also facilitated the control over product quality and food safety (Dicken, 2007).

The poultry industry has remained profitable due to the continuous improvements in technology and genetics together with decreases in economic inputs such as manpower.

Nowadays a hen house holds more than a hundred thousand birds, water is piped, and robots precisely dispense food every hour in controlled amounts. A conveyor belt carries eggs to a special room for cleaning, grading, and packing. In order to save heating and air conditioning costs some hen houses have been built underground. In these houses artificial light is provided at the optimal level for maximum production (Fracanzani, 1999). At the moment the only thing that has not yet being automated is the removal of dead chickens. In the new environment of production even the genes of these birds have been determined by selective breeding. This process has been one of the main factors in determining the increase in egg production per bird and per pound of feed so considerably. Selective breeding has also brought about negative consequences for farmers as high egg laying and aggression are genetically linked. In order to avoid the problem of aggression among closely confined birds other technologies have been developed. Hatcheries now cut a portion of the upper beaks (Sauver, 2002).

Contemporary Expansion

In order to explain the rapid worldwide expansion of the poultry industry some of its production characteristics should be considered:

i. It can be achieved in almost anywhere in the world.

The breeding of chickens is possible even in very hostile environments. An example of this can be seen in Saudi Arabia where production takes place in temperatures over 40 degrees centigrade but equally in Switzerland where the production takes place in temperatures of below 0 degrees centigrade. Temperature is one of the factors that affects the nutrient requirement of poultry and so affects the cost of production (Etches, 1996; Sainsbury, 2002). The producers, who have to cope with the inclemency of frost and snow during the winter, solve the climate problem by making considerations in the design of their poultry buildings. The ability to produce in such a wide range of temperatures is a big advantage of these species (Roberts, 1998). "The optimum temperature for a chicken is 21 degrees centigrade. At lower temperatures it will consume more food in order to keep warm. Insulating a house will not only provide a more congenial environment for the bird but will also reduce feed costs" (Thear, 1997, p.9).

ii. It does not have religious impediments.

In contrast to other kinds of meat, chicken does not face consumer limitations by the diverse religions of the world. Religious issues limit pig consumption from being a quite efficient producer of quality meat, Muslims and Jewish communities forbid pork consumption. A similar case occurs with beef for the Hindus. Chicken meat is an excellent source of protein free of religious or other ethnic taboos (Bulfield, 1994).

iii. It can be produced with minimal labour.

Poultry production is possible in conditions of low application of technology and with the utilisation of low labour input (Duran et al., 1999).

iv. By-products of the activity have alternative uses.

An example of alternative uses for poultry by-products can be found on the use of chicken manure. This would normally be wasted. Being rich in protein it is used as an alternative component of rations to feed ruminants species (Garcia & Trenchi, 1991). The manure can also be used as fertiliser in horticulture, crops, pasturelands, and fruit production (Barbado, 2004).

v. Excellent efficiency of food conversion.

In industrial production the breeds used produce chicken meat with a conversion of roughly two to one, which means that for each two kilos of ration there will be one kilo of meat of high nutrient value produced. A good poultry ration should have a balance in energy, calcium and protein or amino acids. The main component is the energy and this factor could be the difference between a good and a bad breeder performance (Leeson & Summers, 2000). The most commonly used sources of protein for poultry rations are fishmeal, meat meal, bone meal, milk, soya, and dried yeast (Sturges, 1987; Larbier & Leclerck, 1994).

vi. The efficient use of space.

The birds are grown at a density of 10-12 animals per square meter; this density permits production of about 35 kilos of meat in each productive cycle (Duran et al., 1999).

vii. It has a short production cycle.

The amount of time spent in growing depends on the final weight targeted by the market in study. Some markets prefer small birds of about 0.9 kilograms to 1.2 kilograms after

slaughter. On the other hand some markets prefer heavier birds of about 2.3 kilograms or more. The average time required by one cycle of production is between 39-45 days in the first case and between 50-56 days in the second one. Taking into account the time spent cleaning and disinfecting between growing, it is feasible to have 5 to 7 cycles throughout the whole year (DIEA, 2006).

Broiler Processing Plants

Innovations in processing plants have driven lots of changes in the poultry industry. The industry moved from numerous small plants producing whole birds to one of larger plants producing deboned poultry, traypacks, and more processed products. More than three-quarters of the weight of chicken slaughtered at US plants is cut-up or deboned. Marination and other forms of further processing have been growing at a steady pace. Branded consumer products are the latest investment of poultry processing plants. These innovations were responsible for a change of the cost structure. On one hand, the new processed products have increased production costs while on the other hand, new production technologies with increased line speeds, improved yields, and economies of scale, have reduced production cost (Ollinger, MacDonald & Madison, 2005).

Over the past few years the industry has witnessed the increasing use of machines to reduce manual labour. The adoption of technology has simplified many of the processing tasks making easier the remaining tasks that must be conducted manually. New technology brings about an increase of flexibility and revenues. By adding cut-up and processing lines to the end of former slaughter lines, poultry plants have been able to target segmented markets. For instance, a Brazilian poultry plant can export chicken legs to Russia and keep chicken breasts for the domestic market. The future challenges for the poultry industry in the processing arena will be: the relationship between food and human health, labour costs, environmental regulations, meeting the needs of customers, and the overall regulatory burden (Thornton & O'Keefe, 2001).

One of the biggest concerns of poultry processing is to control the variability of inputs to allow for a consistent result to occur. In spite of the efforts of each link within the poultry chain to produce uniform flocks, the processing plant must control its processes to deal with the level of non-uniformity that arrives at the plant. Poultry companies have been adapting quality control systems that were originally developed for processes where inputs

can be controlled and using them to achieve consistent results from one of the most variable inputs, the live birds (Percy, 2002). For instance, Statistical Process Control (SPC) is a management tool used to gather and analyze data to find out whether or not the process is running within normal limits. Over forty percent of the broiler plants in the US report that SPC is used together with their Hazard Analysis and Critical Control Point (HACCP) programs (Percy, 2002).

In the US innovations and technology went hand in hand with a remarkable pattern of consolidation. All this process was triggered by the rapid consumption growth of chickens. Consolidation is likely to continue not only in the US but also globally. It is happening in the EU and is expected to occur in the Far East. All these changes also affected the organization of the poultry firms. Most plants (integrators) adopted an integrated structure, which owns the slaughter plant, feed mills, and contracts with poultry growers. The integrator provides farmers with chicks, rations, and veterinary services while the grower is responsible for providing housing and labour services. Most integrators use contracts designed to reward those growers with lower mortality rates and more efficient conversion of feed to meat (Knoeber, 1989). This system has proved to be very effective in an industry undergoing sharp technological change, since it prevents integrators from continually recalibrating a system of incentives based on levels of performance. The system motivates growers to continually improve their performance. This allows integrators to focus on genetic improvements, better health practices, and management innovations. All the improvements are then shared with their growers (Poultry and Dairy Industry Yearbook, 2001).

The Globalization of the Poultry Industry

The poultry industry was globalized thirty years ago. The impact of globalization has been outstanding on the poultry meat sector. The volume of global poultry meat produced has risen from 13 million tonnes in the late 1960s to almost 62 million tonnes thirty years later and is projected to reach 143 million tonnes by 2030 (Food and Agriculture Organisation 2003). According to these estimates the larger volume of the projected increase will be in developed countries (10 million tonnes); China (8.5 million tonnes); Near East and North Africa (3.9 million tonnes); and Brazil (3.1 million tonnes).

Largest Broiler Producers

The analysis of FAO data indicates that Brazil, China, and the US are the three major contributors to the expansion in global output. The US share of world output has decreased from 25.3% to 22.8%. Nevertheless, it will be with a production of 16 million tonnes the leading poultry meat producer for a while. China has increased its share from 14.6% to 16.7% producing an estimated 10.5 million tonnes while Brazil's share has increased from 7.6% to 11.8% producing an estimated of 9.5 million tonnes (Food and Agriculture Organisation, 2005). Almost 75% of the total global output is produced by ten countries/regions shown in table 10.

Table 2: World Poultry Meat Production. 1995-2006 (million tonnes)

	1995	2004	2005(e)	2006 (f)	1995%	2006%
World poultry meat production ('000 tonnes)	54,655	78,543	81,376	84,038	100.0	100.0
Developed countries	28,403	35,799	36,895	37,690	52.0	44.8
Developing countries	26,281	42,780	44,517	46,385	48.1	55.2
US	13,827	18,008	18,630	19,160	25.3	22.8
China (mainland)	8,000	13,460	13,650	14,000	14.6	16.7
EU	7,970	10,732	10,815	10,855	14.6	12.9
Brazil	4,154	8,8895	9,400	9,900	7.6	11.8
Mexico	1,315	2,272	2,390	2,500	2.4	3.0
CIS (12)	1,296	1,733	1,968	2,073	2.4	2.5
Thailand	1,007	964	1,100	1,250	1.8	1.5
Japan	1,252	1,238	1,245	1,240	2.3	1.5
Canada	0,870	1,123	1,190	1,210	1.6	1.4
Argentina	0,817	0,928	1,070	1,170	1.5	1.4
(e) = estimate *(f) = forecast*						

Source: Adapted from FAO (2005).

Exports of poultry meat have two leaders, Brazil and the US which together account for 70% of this business. US exports have increased one million tonnes since 1995 to just over 3.0 million tonnes, while Brazil's exports have increased from 500,000 tonnes in 1995 to 3.1 million tonnes becoming the world's leading exporter (Food and Agriculture Organisation, 2005). Table 11 presents data of the countries leading exports and imports of poultry meat globally.

Table 3: World Poultry Meat Exports and Imports. 1995-2006 (million tonnes)

	1995	2004	2005(e)	2006 (f)	1995%	2006%
World poultry meat exports (excl. intra-EU trade)	4,560	7,538	8,356	8,828	100.0	100.0
Developed countries	3,181	3,960	4,226	4,287	69.8	48.6
Developing countries	1,379	3,579	4,131	4,542	30.2	51.4
US	2,075	2,755	3,000	3,050	45.5	34.5
Brazil	0,443	2,635	2,900	3,100	9.7	35.1
EU (excl. intra-trade)	0,827	1,010	1,000	1,000	18.1	11.3
Hong Kong	0,334	0,136	0,150	0,150	7.3	1.7
China (mainland)	0,302	0,331	0,400	0,460	6.6	5.2
Thailand	0,195	0,220	0,300	0,400	4.3	4.5
World poultry meat imports (excl. intra-EU trade)	4,840	7,459	8,336	8,710	100.0	100.0
Developed countries	2,288	3,541	3,904	4,005	47.3	46.0
Developing countries	2,547	3,911	4,425	4,698	52.6	53.9
CIS (12)	1,065	1,678	1,806	1,829	22.0	21.0
Japan	0,630	0,695	0,800	0,830	13.0	9.5
Hong Kong	0,697	0,557	0,540	0,560	14.4	6.4
EU (excl. intra-trade)	0,212	0,425	0,485	0,500	4.4	5.7
China (mainland)	0,682	0,186	0,300	0,350	14.1	4.0
Mexico	0,202	0,460	0,520	0,550	4.2	6.3
Saudi Arabia	0,265	0,500	0,550	0,600	5.5	6.9
Canada	0,068	0,154	0,130	0,135	1.4	1.5
UAE	0,100	0,175	0,185	0,190	2.1	2.2
(e) = estimate *(f) = forecast*						

Source: Adapted from FAO (2005).

At the moment, the birds destined for production come from no more than eight genetic houses. These houses are responsible for supplying all the reproductive lines utilised in the entire world. The genetic advantage built by these houses created a high entry barrier for those who have tried to get into this business (Smith & Daniel, 2000).

The Rationalization of the Industry

Since the beginning of the nineties the poultry industry is undergoing a process of rationalization. The companies that make up a part of big conglomerates include other industries such as pharmaceuticals, vaccine production and industrial equipment. Most of them have merged and, for business reasons, have kept their brands separated. These enterprises have their headquarters in the EU, US, Canada and Hong Kong. They maintain

for strategic and sanitary reasons their reproductive lines in four continents. These particular characteristics make this a global industry in view of the fact that the birds bred anywhere have the same origin. This fact determined that the problems have been also globalized as the emergence of a new disease is spread with the speed of a jet causing concern to everybody as risks of infection increase. Consequently, globalisation has increased risk to the supply chain. The well-discussed cases of bird flu are a prime example of how business can be impacted. Avian influenza is spreading from its origins in Southeast Asia. The risk of this disease relies on the following two factors: firstly no one is immune to the virus and secondly the virus can cause serious illness in human beings. The World Health Organization (WHO) argues that the current outbreaks of avian influenza are the largest ever recorded. So far, the new virus has infected over 100 humans and has killed more than half of them (Shane, 2005). This disease has affected the whole poultry industry at global level. Locally those affected by the virus have had to face economic loses. Not only poultry producers have been hit but also associated business such as grain producers, caterers, and restaurants. It is estimated that bird flu caused losses of $8 billion to $12 billion to the Asian economies being comparable to the impact of mad cow disease over several years. Nevertheless, at global level some countries, such as Brazil, have taken advantage of new markets that were opened to them, as those producers with bird flu were temporarily banned (Business and the Environment, 2006).

Although most poultry diseases are of worldwide occurrence some of them are particular to some regions. For example the disease could be restricted to an area that has determined vectors or for other unknown reasons. It is common to find a big incidence of diseases in developing countries that have less regulations and controls than developed countries (Jordan, 1990; Woernle, 1996).

Impacts of Globalization

Production in important markets such as South East Asia, the Russia Federation or the countries of Eastern Europe affects the total global market, generating adverse effects and in other cases positive ones. The major beneficiaries of chicken supply globalization have been the consumers who can choose from a wide variety of products at lower prices. Other intermediaries that have been financially benefited from globalization are those who control the supply chain. While in the US the control is on the hands of processors and food services in the EU the power is mostly on the hands of retailers, although there is an

increasing consolidation of food processing (Ado, 1998). On the other hand, some of the largest producers worldwide have reduced their per cent gross profit. According to some scholars this might be attributable to the continuing pressure on margins in the meat sector at retail and food service level and the cascade effect through the supply chain (Baines, 2002).

Even though consumers have been the main beneficiaries of vertical integration, when vertical integration goes hand in hand with horizontal integration, these two phenomena might lead to an imbalance of power from integrators against consumers and contract producers. A good example can be found in the US where the three biggest integrators (Tyson's, Gold Kist, and Pilgrim's Pride) return on equity averaged 16% between 2000 and 2002. During the same time contract producer's return was insignificant after deducting a very modest amount for labour, management, and risk bearing. This is the consequence of the huge imbalance of power in contracting to the benefit of integrators who have transferred income to themselves while transferring risks to producers (Carstensen, 2000).

Some of the negative impacts of the global trade of poultry must be looked within the context of the modern agro-food industry. The poultry industry has followed the same patterns of other 'high value foods' such as fruits, vegetables, dairy products, and shell fish. The global trade of these food products have created huge environmental impacts due to overexploitation of natural endowments, the application of chemicals and pesticides, the use of genetically modified plants/animals, and the transportation of food over very long distances (Dicken, 2007).

Consumer Perceptions

The major trend of meat consumption is toward special cuts or semi-processed products. The distribution of consumption among the different meat products has been modified in Europe. The result was that poultry meat has benefited from the new trends of life. The US has followed the same pattern where poultry consumption has increased steadily. For instance, between 1960 and 1992, annual *per capita* poultry consumption in US increased about 2.5 times from 34.2 lb to 86.4 lb (Duewer, Krause & Nelson, 1993).

There have been numerous studies to examine consumer attitudes and preferences towards meat products in the US (Skaggs, Menkhaus, Torak & Field, 1987; Capps, Moen & Branson, 1988; Buzby & Farah, 2006). The main factors identified as being responsible for the increase in poultry consumption within the American society are: changes in consumer demographics and lifestyles such as household size, residences, racial mix, and income (Putnam & Van Dress, 1984; Kinsey, 1990; Mccracken, 1990). Consumers have increased the proportion of income spent on food consumed away from the home. This new trend has also been responsible for the increase of poultry consumption as poultry is being positioned as one of the favourite meats for food consumed away from the home (Menkhaus, Whipple, Torok & Field, 1988). The introduction of chicken restaurant franchises and the increased consumption of poultry products in restaurants and take away shops are good examples of this change (Lasley, 1983). In developed countries there is a greater demand for smaller pack sizes, for ready prepared food, and for eating out. Consumers are less likely than before to eat a formal meal and more likely to eat a number of snacks throughout the day. The food offers are changing to reflect patterns in current lifestyles. There is a greater demand for food that takes less time to prepare, that is easily available and that can be eaten on the move. The demand for convenience food is the greatest change in the way people are eating. Chicken meat is a product that suits these new trends of modern lifestyle since it is identified as a versatile convenient product (Gerst, 2005).

The Evolution of Chicken Consumption

Poultry meat has indirectly benefited from a decrease in the level of red meat consumption. Food scares such as Bovine Spongiform Encephalopathy (BSE), the foot and mouth crisis, and general health concerns are the main factors that have led consumers to move away from red meat and chicken has captured part of those consumers (Bingham, 1996; WCRF, 1997; Department of Health, 1998; Food Standards Agency [FSA], 2004). The reduction in red meat consumption has not only been a consequence of the above mentioned factors and reflects the evolution of other animal protein chains such as poultry and fish that have been able to offer cheaper prices than red meat (Fernandez-Armesto, 2001). Consequently, poultry has overtaken red meat consumption in many countries such as the United Kingdom (UK). Poultry *per capita* consumption in this country in 2000 was reported at 28.1 kg while red meat consumption was estimated at 14.1 kg (Poultry World, 2000; FSA, 2005). The poultry industry within the UK seems to have a promising future as its

popularity keeps growing. For instance, caterers showed a remarkable growth during 2004 of 20%, while retail sales advanced by nearly 4%. The data shows that most of the growth within the retail sector is in processed products, which meet roughly half of all retail sales, with primary portions at 27%, and fresh whole birds at 20% (Randall, 2005).

The price of poultry meat has been the main factor responsible in explaining the increase of *per capita* poultry consumption. The fall in price achieved by the poultry industry is unique and neither of its meat competitors has been able to match that pattern. The poultry industry has been the most successful of the animal protein industries in reducing costs and adding value (Castello, Cedo, Capero, Garcia, Pontes & Vaquerizo, 2002). In 1996, thanks to its competitive prices the poultry industry was able to displaced beef as the second most important meat worldwide. Since then poultry has been the largest meat species traded internationally (Miljkovic, Brester & Marsh, 2003).

Another factor responsible for the increase in consumption of chicken meat was its high rate of protein/carbohydrate and the way in which this product was presented. The pre-packed carcass whether frozen or fresh was attractive to the eye of the consumer. Because of that the poultry industry had an explosive growth during the 1980s and 1990s as *per capita* consumption increased nearly 400% based on the boneless equivalent series (Smith, 2004).

Nowadays consumers are more demanding and they expect high quality products. They look for a fresh, tasty, and nutritious product (Morrissey, Sheehy, Galvin, Kerry & Buckley, 1998). Qualitative studies of meat argue that freshness; sensory factors and perceived healthiness are the most important parameters for consumer selection (Munoz, 1998). Most consumers identify poultry as the best option in terms of these attributes (Verbeke & Viane, 1999).

Ethical Issues and Animal Welfare

According to a MORI (one of the biggest Britain's research agencies) survey, 70% of people considered chicken to be the healthiest meat and the one with the lowest fat content (Richard, 2004). Similar results to the British research agencies were found in market research conducted in the US about how consumers perceive chicken, beef, and pork. Among the three meats explored the highest ratings on all attributes targeted in this

research were given to chicken. Chicken is more liked to be perceived as being versatile, having good taste, being easy to prepare, being healthy and nutritious, being consistent in quality, and being reasonably priced compared with beef and pork (Thornton, 1997).

However, the Royal Society for the Prevention of Cruelty to Animals (RSPCA) argues that this healthy image is not in line with the reality of the 100,000 chickens that die each day. The RSPCA points out that the breeding of birds for rapid growth, a lack of long periods of darkness, and high stocking rates are the main factors explaining the shocking number of deaths. The British Poultry Council (BPC) has expressed its disappointment with some statements of the RSPCA that are trying, according to its view, to mislead public opinion. BPC claims that the death of 100,000 chickens a day represents a 4% mortality rate. A study conducted by the association suggests that free range chickens have more than double the mortality rate of indoor systems (Richard, 2004). However, this study did not address the issues of animal welfare and the stress chickens are subjected through factory farming systems and practices.

There are chicken producers that support the RSPCA view and therefore have opted to move away from traditional rearing systems. This move away has occasioned question and comment. Some contemporary authors criticize current poultry farming systems. For them, poultry farming has put too much effort on efficiency and price without much concern for animal welfare. As a consequence of this we can now find poultry breeds that grow so fast that their legs are not able to support their weight (Lymbery, 2006).

Consumers no longer remain unaware of poultry practices and they have started to demand chickens that were reared in higher welfare conditions. They also demand products that were produced in line with environmentally friendly practices. In this scenario, green consumers, sustainable products, and environmental management have further segmented supply chains. Branded organic, antibiotic-free or free-range poultry are differentiated products aiming to satisfy customer requirements. The growth in production of 'Label Rouge' is a vivid example of the success of this niche market (Garcia, 2004a). The objective of 'Label Rouge' production is to create the image of traditional rural breeds reared in free-range farms and fed with diets free of by-products from the meat industry, and any pronutrients, conditioners or prophylactics (Westgren, 1999).

Research undertaken by the EU 'Welfare Quality' has suggested that many consumers want animals to be grown under more natural conditions. They not longer want to eat animals that have suffered. Data from retail analysts TNT has shown that free range egg production is the fastest growing sector of egg farming (Lymbery, 2006). Interestingly, the number of broilers reared under RSPCA's Freedom Food standards in the UK has doubled between 2003 and 2005 (Poultry World, 2006). Freedom Food is the RSPCA's farm assurance and food labelling scheme dedicated to improving welfare standards of animals reared in the UK. Because of consumer pressure UK supermarkets display four types of chicken: standard, free range, organic, and Freedom Food (Poultry World, 2006).

Another important theme to consider while looking at animal welfare is public health. Research has shown that the bacterial contamination of birds seems to be higher in alternative systems than in traditional farming systems (Poultry World, 2005b). On the other hand, reports have shown that today's chickens contain three times more fat than chickens produced 30 years ago (Poultry World, 2005b).

Broiler welfare is a controversial topic attracting very divergent opinions. It is clear that more research is needed before arriving to rounded conclusions. However, consumers have already started to push for alternative ways of production. The reality indicates that most poultry is produced under intensive farming systems and it would be unrealistic to think that this situation would change overnight. Researchers believe that changes in stock density, selection, and feed and nutrition will be introduced gradually into the traditional poultry industry in order to improve bird welfare and address consumer's concerns (Poultry World, 2003).

Food Safety and Quality Control

Increasing international trade in food has affected food safety. Thirty years ago most of world food production was consumed in the country in which it was produced. This situation contrasts with today's reality. Numerous food regulatory measures have been adopted internationally to address the safety aspects of international trade. In spite of these measures, globalization of food markets has raised consumers' concerns about food safety and with fairer treatment of farmers in developing countries. Poultry consumers are not the exception and they look for food products entailing the desired consumption attributes that are free of contamination (Yeung & Morris, 2001). Therefore, the management of food

quality and food safety in the chicken supply chain between the farm and the consumer has become of paramount importance. There are some distinctions among the concepts of food quality, and food safety. Quality refers to the nutritive, organoleptic, or other biochemical and biophysical characteristics that are valuable to consumers. Food safety is associated with the assurance of safety and the absence of food-borne pathogens (Mountney & Parkhurst, 2001).

As consumer's parameters of selection evolve both retailers and the poultry industry must envisage the way they will manage and merchandise the meat presentation of the future. Most meat experts agree that in the upcoming years consumers will put more and more emphasis on safety and convenience issues (Yeung & Morris, 2001). Therefore, capital investments supporting flexibility in production lines and improving food safety will be critical for those aiming to survive in this competitive industry (Tosh, 1998). Power has shifted along the food chain and consumers today have more power than 30 years ago. They are aware of this power and they want to express their will on matters such as food safety, environmental safety, how workers are treated, and how animals are reared (Yeung & Morris, 2000). New legislation on antibiotic growth promoters in the UK and EU was the result of consumer's pressure (Garcia, 2004b; Dicken, 2007). The risk of not complying with safety regulations might put in danger the profitability of poultry companies in the upcoming years.

Consumers' Perception of Risk

According to some scholars, consumers' perception of risk has a significant effect on purchase behaviour and therefore, it must always be considered by management strategies of the food industry (Yeung & Morris, 2000). The analysis of consumer risk has helped to shape marketing programmes of forefront companies. The concept of perceived risk was initially analyzed by Bauer (1960). According to him, consumer behaviour is motivated by subjective impressions rather than objectivity of risk. Taylor (1974) argues that consumer's risk perception shape purchases. The theory seems to work properly during periods of food scares while consumers overreact to the real food risks ignoring the true facts (Lofstedt & Frewer, 1998). Avian influenza is one of the most significant topics of the poultry industry and massive reductions in consumption in many countries have shown the importance of perception of risk on consumer behaviour (O'Keefe & Thornton, 2006). Consumer confidence on food safety has been undermined by incidents involving microbiological

contamination such as *Salmonella* and BSE, chemical residues in food such as dioxins, and the possible risks of genetically modified organisms. All these events have affected consumer purchase behaviour (Mintel, 1997; Hume, 2001).

Research revealed that 20% of UK consumers see the consumption of chicken riskier than one year previously. The main causes of concern were bird flu (20%), cramped rearing conditions (13%), and the use of antibiotics and chemicals (12%) (Poultry World, 2005a). Not surprisingly a survey conducted in 2004 in the US showed that new issues are competing for the attention of poultry managers. This survey collected data from live-production managers responsible for producing half of the poultry in the US. According to the surveyed managers, environmental concerns were identified as the biggest challenge followed by biosecurity and disease and animal welfare. Interestingly production costs were ranked behind environmental and animal welfare concerns. Other identified challenges in order of importance were: growing urbanization, grower relations, recruiting, food safety of finished product, elimination of drugs, and shrinking resources for universities and extension programmes (Poultry World, 2005a).

Biosecurity

Biosecurity refers to all procedures utilized in order to prevent the introduction of disease-causing organisms in poultry flocks. The use of contaminated equipment or exposure to contaminated humans and animals has been identified as the main responsible factors of spreading disease-causing microorganisms between poultry flocks. In order to tackle these problems many poultry industries have implemented "shower in and shower out" as part of their biosecurity regulations (Calne, 1995).

Biosecurity is essential for the poultry industry as it entails bigger risks than other livestock production. Poultry is especially at risk because:

i. Intensive production, fast throughputs, and short turnaround times.
ii. Increased risk for young birds entering multi-age farms that were vacated by older birds.
iii. Infection carried by those vehicles that go from farm to farm.
iv. A large labour force in contact with birds.

v. The specific threat of avian influenza in wild bird populations and backyard poultry.
vi. Great susceptibility to rodent-borne infections, fungal spores, and mycotoxins (Cunningham & Fairchild, 2006).

In order to comply with consumer's demand in terms of safety, HACCP programmes have been adopted by many processing plants. HACCP changed the rules on how to inspect poultry since it offers potential for enhancing food safety by stressing controlling contamination through microbial monitoring as opposed to the old system that focused upon visual inspection. HACCP programmes have also started to be adopted in the live side of the poultry business. According to American industry sources, the processing plant and the hatchery are the most risky places for birds to be infected with salmonella. Achieving good sanitation standards at the hatchery improves live-bird performance and reduces the prevalence of pathogens on birds at the processing plant. The main factors to be controlled in order to keep pathogenic bacterial growth on the farm at a minimum level are: house temperature, humidity, ventilation, and litter conditions. Controlling the digestive tract of the bird is another factor that helps to improve both bird health and food safety. Examples of controlling intestinal microflora are the use of low levels of antibiotics, coccidiosis vaccines, and salmonella vaccines (Thornton & O'Keefe, 2003).

In spite of chicken accounting for 40% of all meat eaten in the UK, a consumer survey conducted in 2000 revealed that 54% of consumers are worried about the hygiene standards in raw chicken (FSA, 2001). Among all kind of food risk in chicken, microbiological risks, chemical risk and technological risk are the three that cause most concern among the consumers (Yeung & Morris, 2001). Microbiological risk entails all risks caused by bacteria. Food spoilage and food poisoning are the worst effects caused by bacteria (Trickett, 1997). Among the different types of bacteria, *Salmonella* and *Campylobacter* are the commonest found in chicken products (Suzuki, 1994a). These bacteria affect both poultry and egg industries (Institute for Animal Health, 2000). For instance during the year 1999 in the UK 19,801 cases of *Salmonella* and 61,713 cases of *Campylobacter* were reported from laboratories (PHLS, 1998; Hingley, 1999; FSA, 2000).

Chemical risks refer to risks that are caused by residues in food. These residues are the result of chickens being fed with antibiotics and the remnants of agricultural chemicals in

rations. When these chemical residuals get into human systems they may cause cancer, chronic fatigue syndrome, immune deficiencies, and lung and nerve damage (Environmental Media Services [EMS], 2000). According to organisations dealing with food safety control, the agricultural use of antibiotics is a main source of antibiotic resistance among food-borne pathogens (EMS, 2000). Some authors argue that the large use of antibiotics in poultry may result in the emergence of multi-drug resistant strains of pathogenic bacteria, which in turn may reduce human resistance to antibiotics (Gottlieb, 2000). This information has made poultry consumers concerned about the intensive production methods that rely on the use of high doses of antibiotics (McKellar, 1999).

Technological risk refers to those risks that could be consequence of technological advancements in food products. The heated debate about the potential effects of genetic modification of food is a primary example (Ford & Murphy, 1998). How this technology can help to ensure food security in the new century is a main issue. It is the view of some critics that neither the proponents nor the opponents have been able to provide the public with the basic information necessary to decide whether they want to support or reject genetic modified foods (Gregoriadis, 1999; Weiss, 1999). The uncertainty about food safety increases consumer concerns. When that happens public opinion might be influenced by media coverage (Miles & Frewer, 1999).

The Evolution of the World Poultry Market

A particular characteristic of this kind of meat is that only 11% of the poultry world output is sold outside the countries in which it is produced; 88% of it is chicken that dominates the market over turkey, duck and goose. The main production areas are in the US, which makes up for 16 millions tons. Traditionally the main exporters are Brazil, US, EU, Hong Kong, China, and Thailand. The main importers are Hong Kong, the Russia Federation, Japan, and Saudi Arabia. Hong Kong appears on both lists. This occurs because of the particular relationship between the ex-British colony and China where Hong Kong plays the role of an intermediary (Viandes, 1998).

The evolution of the world poultry market shows data of the last few years exhibiting important trends. EU broiler exports had returned to normal after the BSE crisis faded and demand for beef came back to normal. Then the outbreak of pathogenic avian influenza hit the EU. In 2006 exports are estimated at 650,000 tonnes a dramatic drop of 300,000 tonnes

while compared with 2003 (Poultry International, 2006). Domestic poultry producers looked with satisfaction on changes in EU regulations in 2003. In that year the EU banned the import of salted chicken meat into the EU at a low tariff rate. Because of this change it is expected a fall of the imports coming mainly from Thai and Brazilian exporters. This would give the chance to local producers to increase their share on the internal market (O'Keefe & Thornton, 2006).

The United States Department of Agriculture (2006) forecasts an increase in demand for broiler meat of 1.8 million tonnes in India doubling the market of five years ago and making the Indian broiler industries one of the fastest growing worldwide. It must be acknowledge that domestic producers mainly supply India's poultry demand. The largest Indian poultry exporters have upgraded their processing plants to address new markets such as Japan, which recently opened its doors to Indian products. They want to take advantage of the opportunities arising due to the spread of avian influenza in several countries, as Indian poultry has remained so far unaffected by the disease (Poultry International, 2006).

In Russia there was a reduction in support given by the Government to the poultry industry. This fact coupled with the strong competition of importing products determined that many domestic producer companies were heading towards bankruptcy. This process was slowed down at the end of 1998 because of the strong devaluation of the Russian currency. In 1999 the government imposed a quota on imports in order to help the local industry against foreign producers (Agra Europe Ltd., 2003). However, in 2005 the import quota was increased from 1.09 million tonnes to 1.13 million tonnes (Poultry International, 2006).

In Rumania and Bulgaria a huge re-structure of the poultry sector, still handled by the government, had the effect of reducing production levels. In Taiwan a decrease in demand is also forecasted after the effects of the foot and mouth disease on pigs, which had meant a huge increase in the consumption of poultry meat (Poultry International, 2006).

The disease called Influenza Aviar affected Hong Kong six years ago and sanitary restrictions were applied. In the years following the outbreak of the disease the country saw a decrease in production but last year it started to recover. China has become a major

player. In 2002 China's exports suffered the impacts of avian flu. Japan its larger market (70%) banned the import of Chinese fresh or frozen chicken. In 2004 the Japanese government lifted the sanitary barrier and from that moment exports have increased to a record of 440,000 tonnes. A new phenomenon is the fact that some of the chicken products exported to Japan come originally from the US and are processed in China (Unites States Department of Agriculture, 2006).

The Indonesian forecast shows a contraction in production caused by the increase in the prices of inputs, avian influenza, and a fall in the demand originated by economic problems. Avian influenza is endemic in Indonesia with 21 out of 33 Indonesia's provinces having reported cases. Malaysia faces a similar situation where poultry industry growth is likely to slow somewhat in line with the rate of economic growth and rising production costs. In Nigeria restrictions on imported poultry meat were lifted in 1999. A tariff of 150% was allocated but in spite of this, it is estimated that imports will start in this country after a number of years under ban. A continued steady growth is expected in Mexico, while in Thailand the industry is expected to keep up with its recovery (Poultry International, 2006).

Data related to exporter countries reveals interesting aspects. The US has faced a lot of competition from new exporter producers. China faced a small decrease in its exports as a consequence of the competence of Taiwan that took advantage of the devaluation of its own currency. Brazil will have in their traditional markets of Asia the same competence meanwhile in the close Orient its position will be threatened by the EU (Business and the Environment, 2006).

Poultry Meat Trade

Over the last few years the chicken export industry has been suffering the negative impact of different factors such as avian influenza, and deep political crisis in some countries. But even taking into account these factors the trend forecasted for the consumption of poultry meat is positive and is expecting an annually accumulative increase of about 3% (United States Department of Agriculture, 2006).

The most affected variable has been international poultry trade but the consumption itself continues to grow as with previous forecasts. The main factors responsible for the increase in consumption are:

i. An increase in the incomes of some sectors of the population.
ii. An increase in the population.
iii. Trends to eat more healthily. Look for healthier sources of protein.
iv. New lifestyle, there is a demand for quick processed dishes and new cuts.
v. Better price of meat poultry compare with some of its substitutes (Baines, 2002).

It is the view of many scholars that poultry meat will continue to be popular, perceived as versatile, with limited ethnic barriers, and moving up the value chain by adding value. The high level of integration allows the chicken industry to perceive consumer preferences and respond quickly. In spite of being a mature industry it should remain on the forefront of innovation, offering new products, marketing alternatives, educating consumers, and cost-cutting manufacturing and delivery systems. The new technologies allow the industry to respond faster than ever to market needs. Improvements in computer power have allowed primary breeders to evaluate enormous sets of data and as a result to evaluate the potential role of genetics in processing characteristics such as meat quality and procesability (United States Department of Agriculture, 2006).

Signs of chicken fatigue have not been identified. For instance, in the US it was predicted chicken fatigue would occur at 18 kg. *per capita*, then at 23 kg., and then at 27 kg. Today Americans are consuming more than 36 kg. *per capita* a year and there are no signs of fatigue (Unites States Department of Agriculture, 2006). However, it is also true that the future will be much more difficult for the poultry industry. In the past 40 years as poultry's share of the protein market increased, producers and processors grew in scale and benefited from lower production costs, which in turn contributed, to better prices and greater share gains. Nowadays as most markets are mature and highly competitive the new environment will put pressure on many poultry companies. As in any business sector only the most efficient companies will survive (Parker, 2004).

The Future of Poultry Meat

According to the latest Food and Agriculture Organisation of the United Nations (FAO) forecasts, global poultry meat production will continue to rise reaching 100 million tonnes in 2015 and 143 million tonnes in 2030. These forecasts also envisage that by 2030 the developing industries will produce almost double that of the developed (see Table 12). China, the Philippines, Indonesia, Mexico, Peru, Brazil, Myanmar, Vietnam, and the Dominican Republic will be the major contributors of world growth accounting for more than 35% of poultry meat production in 2015 and 2030 respectively. As already mentioned the demand for poultry is influenced by both the increase in population and incomes. Both factors have high rates of growth in China, India, Russia, Mexico, and Brazil. Poultry products account for 30% of global consumption of animal protein having the highest annual rate of growing of 2.6% (Food and Agriculture Organisation, 2005).

Table 4: Forecast Poultry Meat Production for 2015 and 2030 (million tonnes)

	1999	2015	2030
World Total	**61.9**	**100.6**	**143.3**
Developing countries	31.3	59.1	93.5
Sub-Saharan Africa	1.0	1.9	4.1
Latin America	10.5	18.3	27.3
Near East / N Africa	3.2	7.1	11.6
East Asia	15.5	27.9	39.9
South Asia	1.1	3.9	10.6
Developed countries	30.6	41.5	49.8

Source: Adapted from FAO (2005).

The most important factors affecting the cost of production in producer countries are the national cost of grain and labour. Brazil has become the most efficient producer in terms of cost production. Other factors affecting the world trade are tariffs and currency value. The devaluation of the Brazilian Real has helped this country to become more competitive in the production of chickens. It is interesting to look at the effects of currency value among some of the largest producers. At current exchange rates the cost of production in dollars in both Argentina and Brazil is lower than in the US. Costs of production in Thailand and Mexico are similar to those of the US, while costs in China are slightly higher (Lee, 2006).

Regardless of the impact of avian influenza, world poultry meat was able to keep its 31% share of the total meat market in 2006. Poultry meat makes up the 33% of world meat production in developed economies and 29% in developing nations. According to FAO poultry meat output grew 30 millions tonnes between 1995 and 2005. The growth of world trade has also been remarkable almost doubling from 4.6 million tonnes to 9 million tonnes during the same period.

The exports leaders Brazil and the US are likely to keep their positions in the international arena. EU exports are not forecasted to change and will probably remain at one million tonnes. China's exports are expected to rise, while shipments from Thailand seem to be recovering. According to the forecast, imports into the 12 CIS countries will have a small increase in the upcoming years with the Russian Federation as the main buyer (Food and Agriculture Organisation, 2005). Japan will continue being a major buyer while Saudi Arabia and Mexico become major importers.

Summary

Poultry production, distribution, and consumption have dramatically changed over the last few decades. The main changes responsible for the development of the chicken industry are: university and private research, the creation of artificial hatcheries, advances in chicken nutrition, improvements in the efficiency of production, management innovations, and improvements in technology and genetics. All these changes have helped the poultry industry to become very competitive against other meat products.

The rapid worldwide expansion of the poultry industry was favoured by some of its production characteristics such as the possibility to breed chickens in a wide range of temperatures, the lack of religious impediments against eating chicken, the efficiency of food conversion and its short production cycle. The poultry industry has been also benefited by the new trends of life. Consumers perceive chicken as a versatile, convenient, and healthy meat. Consumers are gaining more power within the food chain and many researchers state that they will put more emphasis on safety, environmental, ethical, and convenience issues. Some studies in the UK indicate that some consumers see the consumption of chicken riskier than one year ago. Therefore, this is an area where the poultry industry will have to work on.

The factors that will affect the future development of the global poultry-meat trade can be summarised as follows:

i. Strength of currencies and their impact on imports and export of traded poultry products.
ii. The adoption of technology by developing countries.
iii. Tax and regulatory legislation in nation states.
iv. Cost of capital, feed, and labour.
v. Concerns over animal welfare, food safety, and hygiene standards.
vi. Land size constraints to meet the feed requirements of increasing global bird numbers (Baines, 2002).
vii. Broilers will continue to gain weight. Biotechnology improvements will help broilers to become even more efficient in terms of feed conversion. The process industry will require larger birds for deboned products and value added products.
viii. Grow-out houses will increase their size and capacity. There will be a major concentration of grow-out farms. Processing plants will operate at higher line speeds and with fewer workers.
ix. There will be a further rationalization of companies in the industry.
x. There will be opportunities for those companies aiming to supply specialized products such as free-range chicken, organic chicken and similar products (Roenigk, 2001).

Globalization has had a major impact on the poultry sector which has continually increased its volumes of production. Globalization has also had negative impacts for the poultry industry. The emergence of new diseases such as bird flu is a primary example of how business can be globally impacted. In spite of the problems faced by the poultry industry in recent years, scholars argue that the future of this industry is promising because poultry meat will continue to be popular, perceived as versatile, with limited ethnic barriers, and moving up the value chain by adding value. *Per capita* consumption of chicken will increase but at a smaller rate than in the past ten years. As most poultry markets are now mature it is expected a slow down in the rate of growth and more competition between poultry companies.

'he next chapter presents and analyses the literature on regional agreements with particular mphasis on the MERCOSUR union.

Chapter 4

Customs Union and MERCOSUR Economic Integration

This chapter starts by covering the literature on regional agreements. It then continues with an insight into the MERCOSUR market and its impacts on the Uruguayan economy. In the last sections an evaluation of the effectiveness of MERCOSUR, its main drawbacks, and the future of the union is discussed.

Trading Agreements

In spite of the efforts and negotiations of the World Trade Organization (WTO), countries continue to establish new preferential trading agreements. Between 1990 and 1997, according to Chang and Winters (1999), 87 regional agreements were notified to the WTO. Currently, most of WTO members belong to one regional agreement. At present, one third of total world trade takes place under the umbrella of some kind of regional agreement (Gonzalez Rozada, Pires de Souza, Barros de Castro, Lorenzo, Noya, Daude, Osimani & Laens, 2000). The failure of the Fifth WTO Ministerial Conference in Cancun, Mexico, September 2003 stressed the importance of bilateral and regional agreements as an alternative option for trade negotiations (Kamal & Imai, 2003).

The literature on regional integration states that these new regional economic blocs are the result of increasing competition in world markets (Manzetti, 1994). The need to enter into the world economy has led countries to one political approach. As a result of that approach, many international agreements have arisen. Some agreements are between economies of similar size while others are between small and large countries (Konishi, Kowalczyk & Sjostrom, 2003). Economic integrations obtain advantages to all member countries such as an expansion of markets, an increase in resistance to discriminatory practices of protectionism, an increase in comparative advantages, a higher degree of diversification and a reduction of costs through improved economies of scale (Roett, 1999).

These recent agreements take the form of customs unions or free trade areas. Customs unions refer to those areas where members eliminate tariffs among them and quote a common external tariff on their imports from non-member countries. The tariffs may be

different for different goods and applied to some countries and not others, but the trade policy with respect to all external countries is consistent throughout member countries. The European Union (EU) is the most well known example. In the free trade areas, members eliminate tariffs on mutual trade but they leave it up to each member, which tariffs to impose on non-member countries. Examples of free trade areas include the member states of the North American Free Trade Agreement (NAFTA) and the European Free Trade Association (EFTA) (Wikipedia, 2005).

Nowadays it is common to find products that have been manufactured in more than one country. This fact makes it difficult on some occasions to determine when a product should be considered of intra-zone and when not. Therefore, it is of quite importance to define approaches to clarify the origin of merchandise. Only the goods that are native of one of the countries partners, or manufactured with products that are from the country partner can be exchanged free of all obligation (Sifuentes, 2001).

There are different theories about the pros and contras of customs unions. The study conducted by Viner (1950) showed that a customs union might reduce economical welfare if it induces members to import from high-cost rather than from low-cost resources. However, Gehrels (1956) and Lipsey (1957) pointed out that even in this case it would be possible for a customs union to raise economic welfare when there is sufficient substitution in consumption or in production. Roughly twenty years later, Ohyama (1972) and Kemp and Henry (1976) demonstrated that it is possible to form customs unions setting a common external tariff which do not affect non-member countries and that redistribute income between members in order that no member countries lose and some member countries gain from joining the customs union.

According to some scholars the integration of Latin American countries is vital for the sustainable development of the region. Globalization and economic liberation are the dominant concepts of the new world economy. In that context countries are forced to work in a more integrated way (Roy, 1999; Banco de Desenvolvimiento Interamericano, 2000).

MERCOSUR Agreement

On March 26th 1991, following regional integration trends, four countries of South America: Argentina, Brazil, Paraguay, and Uruguay signed the Treaty of Asuncion which

called for the creation of the Common Market of South America (MERCOSUR). All members agreed to comply with all provisos of the treaty by January 1st 1995. The union aimed to remove all kinds of tariffs on the flow of goods and factors of production, implement a common external tariff, and coordinate macroeconomic and sectoral policies (Da Motta Veiga, 1992). MERCOSUR integration has its origins on several agreements that had started many years before between the two most developed countries of the organization (Brazil and Argentina) on important issues as capital goods, food, auto industries, energy supply, and nuclear energy. These agreements helped to overcome decades of mutual distrust and rivalry. The main motivations underpinning Brazil and Argentina integration were to restore international political and economic credibility (Kaltenthaler & Mora, 2002).

It is worth noting that MERCOSUR members embarked on wider economic integration into the world economy during the last 20 years. Prior to this time MERCOSUR countries implemented a more closed-economy development strategy known as "industrialization via import substitution". Under that model the state acted as the larger investor in the economy and as the guide of the development process (Paiva & Gazel, 2003). In that scenario, those sectors which were thought to be relevant for the economy of the countries, enjoyed subsidies and protection against foreign competition. These strategies resulted in inefficient and non-competitive economies that grew insulated from foreign competition. The new regionalism entails an opposite strategy that arose as part of the neoliberal economic model, with export-led growth as the main factor of development (Filho, 1999). MERCOSUR members aim with the new approach to become more competitive in the international arena (Smith, 1993).

MERCOSUR's Institutions

Two major intergovernmental departments make the decisions of MERCOSUR. The Common Market Council (CMC) is made up of ministers of foreign affairs and economy and it is responsible for political direction. The Common Market Group (CMG) is the implementing authority, which is composed of representatives of the central banks and coordinated by the ministers. The Common Market Group responsibilities are: to monitor compliance with the Treaty; enforce Council decisions; make recommendations for further liberalization; undertake negotiations with non-members and; establish work programs aimed at securing the common market objective.

MERCOSUR has also an Administrative Secretariat, which is located in Uruguay, and it is responsible for providing services to the other MERCOSUR authorities. Some of its roles are: keeping an official archive of MERCOSUR documents, and publishing and disseminating decisions adopted within the scope of MERCOSUR. In contrast to the EU, MERCOSUR lacks any supranational institutions. At the end of 1994 the Joint Parliamentary Commission and the Advisory Forum on Economic and Social Matters were created. The Joint Parliamentary Commission is the representative authority of the Parliaments of the member countries within MERCOSUR. It is composed of an equal number of Parliament representatives from each member country and aims to accelerate implementation of the norms issued by the MERCOSUR authorities. Since the Joint Parliamentary Commission has no supra-national authority norms must be ratified by each member state's Parliament before they can be enforced. The Social-Economic Advisory Forum is the authority representative of the economic and social sectors in each country and is made up of an equal number of representatives from the business and labour sectors from each member state. In reality these institutions are just coordinating structures limiting their actions to monitor and make recommendations. Moreover, there is no mechanism for resolving disputes. The decisions of MERCOSUR rely on the presidents and foreign and economic ministers represented in the CMC (Markwald & Machado, 1999).

MERCOSUR's Legal Status

MERCOSUR can be defined as a 'customs union in formation' because it still needs to meet a number of essential requirements to entirely become a customs union. For instance, it should eliminate all tariff and non-tariff barriers among member countries and adopt a common external tariff for trade with non-member countries. One peculiarity of this block is that it does not fit with the main theories of regional integration. The major theories, which were drawn from the EU experience, are liberal intergovernmentalism and supranational governance. Both theories consider society as the starting point for integration. In contrast, MERCOSUR is the outcome of the political will of national governments. Once it was created, then the public demanded further integration (Malamud, 2003).

Liberal intergovernmentalism argues economic interdependence as an important pre-condition for integration. The increase of export dependence and intra-industry trade

creates the basis for integration. Supporters of this theory see regional institutions as mechanisms to enforce agreements rather than as autonomous actors. MERCOSUR does not fit with the ideas underpinning liberal intergovernmentalism because it did not arise as a result of economic interdependence or social demands. Moreover, it lacks a significant institutional structure.

Supranational governance theory highlights the importance of the following players in the achievement of European integration: national states, transnational transactors, the European Commission, and the European Court of Justice. As described above, MERCOSUR lacks supranational institutions with real power, therefore leaving national states as supreme actors. Empirically, the management of crisis and the coordination of problems have been carried out by the presidents of the union (Danese, 1999).

Customs Barriers

There are two types of customs barriers: tariff and non-tariff barriers. Tariff barriers refer to those that impose taxes on products entering a country coming from foreign countries. The objectives of the tariff are to protect domestic industrial activities and to collect money that passes as income of the State. Non-tariff restrictions refer to those barriers to the circulation of goods that are detected only with a detailed examination. For instance, sanitary measures are non-tariff restrictions (Sifuentes, 2001; OPYPA, 2004).

According to the international trade literature (see, for example, Corden, 1974; Hillman, 1982; Mayer, 1984) there are two approaches to explain the existence of tariffs. The terms of trade approach explains the existence of tariffs in terms of the ability of large countries to influence world prices. A tariff acts by reducing the international demand for the imported good and as a result decreases its international prices, which in turn improves the terms of trade of the importing country (Corden, 1974). Thus, the tariff imposing country redistributes revenue from the rest of the world to itself. The endogenous tariff formation theory is the second approach which views trade policy as a way of redistributing income towards preferential groups or lobbies (Grossman & Helpman, 1995).

The above approaches have been applied to explain the rationality of customs unions (Winters, 1996). The terms of trade theory argues that the formation of a customs union could also be explained as the willingness of integrating partners to internalize their terms

of trade effect. When countries import the same product, forming a customs union allows them to increase their international market power (Riezman, 1985; Krugman, 1991).

The study conducted by Olarreaga, Soloaga, and Winters (1999) argued that both forces were important in determining the common external tariff in the case of MERCOSUR. In spite of the small size of the block in terms of world gross domestic product (GDP), the terms of trade effects accounted for between 6% and 28% of the explained variance in the structure of protection. The study also showed that MERCOSUR members have internalized in their common external tariff the terms of trade externality that arises when members import the same products. For instance, when Brazil raises its tariffs on imported goods, this in turn leads to a drop of international prices. If the rest of members import similar goods, this causes a positive externality for the region, as imports are now cheaper (Olarrega et al., 1999). Therefore, although political economic forces are responsible for explaining the larger proportion of the common external tariffs, the terms of trade rationale for tariffs must not be neglected.

MERCOSUR's common external tariff.

MERCOSUR members established an external tariff which ranged from 0-20% by product type: 0-9% for raw materials and some foodstuffs; 10-15% for certain agricultural products and semi-processed goods; and 15-20% for textiles, manufactured goods, and consumption goods (Frischtak, Leipziger & Normand, 1996). A certain number of sensitive products were granted tariff exceptions. In theory the agreed exceptions were expected to end in 2006. However, the schedule has been suspended until the common external tariff is revised with a maximum deadline by the end of 2010 (Bucheli, Laens & Terra, 2005).

The determination of tariff rates was a difficult process, which required an arbitrage between the existing structures of production and protection. On the one hand, Brazil pushed for low nominal tariff rates for agricultural products in order to facilitate the supply of foodstuffs while on the other hand, Argentina was against very low tariff rates, which would put local producers at a disadvantage when competing with subsidized products from the rest of the world (Da Motta Veiga, 1999).

An Overview of the Main Characteristics of MERCOSUR

This section looks at the relevant aspects of the newest trade union of the world. The Common Market of the Southern Cone was established in 1991 and formally entered into force in 1995. Since then, significant progress has been made in terms of tariff reductions between member countries and the implementation of a common external tariff. It comprises four members (Brazil, Argentina, Paraguay and Uruguay) and two associates members (Bolivia and Chile) representing over 210 million inhabitants. In 2003, Peru became the latest associate member after signing a free-trade agreement with the trade block.

Figure 6: MERCOSUR Map

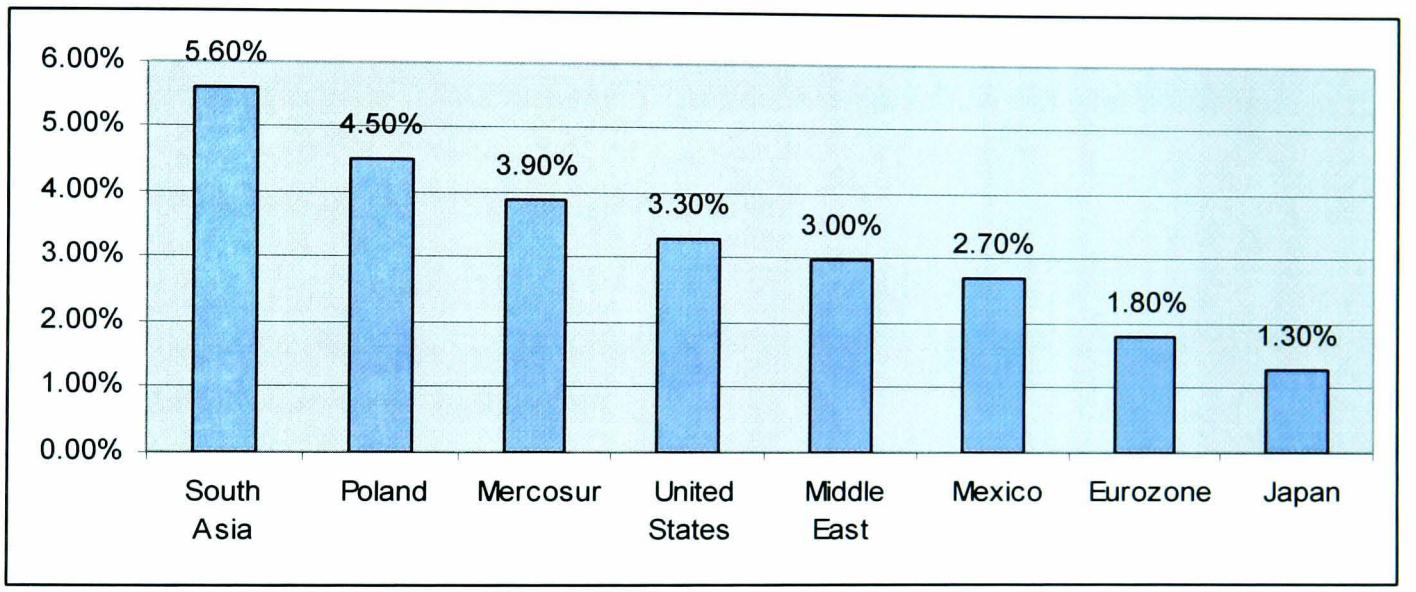
Source: Adapted from The Sectorial Commission for MERCOSUR (2000).

MERCOSUR's combined GDP exceeds $1 trillion and it has been growing at an average of 2.88% per year for the last decade (Jurn & Park, 2002). The economy of the block is based on primary products such as agricultural production, meat production and mineral resources. MERCOSUR is the third-largest trading bloc in the world after the EU and NAFTA. It is the major trade group in South America. It is significant because of its size: the four original members generate 70% of the gross national product (GNP) of the continent (United States of America Department of Commerce International Trade Administration, 1999). In spite of the size of the bloc representing two thirds of Latin America's total area, Brazil alone makes up for over 40% of the entire region while

Uruguay accounts for less than 1% making clear the enormous differences between member countries. Moreover, Brazil alone accounts for 75% of the total MERCOSUR gross domestic product and for 80% of its industrial manufactures (Lavagna, 1991). Until 1999, MERCOSUR seemed to be one of the most successful unions among developing countries. However, during the period 2000-2001 the block stability was in doubt due to a financial and economic crisis (European Comission, 2002).

As it can be seen in table 1, MERCOSUR union was one of the most dynamic regions of the world during the nineties.

Table 5: Economic Growth. Annual Average (1991-2000)



Source: Adapted from CEI based on World Bank (2001).

A table of the main socio-economic indicators of the countries that make up the MERCOSUR union is presented below.

Table 6: Socio Economic MERCOSUR Indicators

	Land		Population 2000		GDP 1998		GDP 2001	
	In km²	% of LatAm	In 000s	% of LatAm	Constant 1995 U$ mil	% of LatAm	Constant 1995 U$ mil	% of LatAm
Argentina	2,780,400	13.50	37,032	7.30	281,450.2	14.78	257,723.5	12.94
Brazil	8,511,965	41.40	170,693	33.60	703,647.6	36.96	749,505.7	37.64
Paraguay	406,752	2.00	5,496	1.10	8,594.0	0.45	8,737.0	0.44
Uruguay	177,414	0.90	3,337	0.70	20,517.7	1.08	18,780.2	0.94
Bolivia	1,098,581	5.30	8,329	1.60	7,727.0	0.41	8,036.0	0.40
Chile	756,626	3.70	15,211	3.00	84,953.2	4.46	90,622.2	4.55
Mercosur	13,731,73	66.80	240,098	47.30	1,106,890	58.14	1,133,405	56.91
Rest of Latin America	6,814,350	33.20	267,832	52.70	796,849.2	41.86	858,090.7	43.09
Latin America	20,546,088	100.00	507,930	100.00	1,903,740	100.00	1,991,496	100.00

Source: Adapted from the Anuario Estadistico de America Latina y el Caribe (2002).

The main objectives of MERCOSUR agreement are:

i. To increase the size of individual national markets through integration, so as to improve economic development.
ii. To make a more efficient use of the available resources, preserving the environment, improving physical links, co-ordinating macroeconomic policies and complementing the different sectors of the economy, based on the principles of gradualism, flexibility and equilibrium.
iii. To increase members' international market power.
iv. To promote scientific and technological advances, which would help, modernise the member's economies (Sectorial Commission for the MERCOSUR, 2000).

The common market should imply:

i. The free movements of goods, services and factors of production (capital and labour), amongst the countries of the union.
ii. The establishment of a common external tariff and a common trade policy that will contemplate the particularities of each country.
iii. The co-ordination of macroeconomic and sectorial policies between member states in the areas of: foreign trade, agriculture, industry, fiscal and monetary issues.

foreign exchange and capital, services, customs, transport, and communications in order to assure adequate conditions of competitiveness amongst member states.

iv. The commitment between member states to harmonise their legislation on the relevant matters in order to strengthen the integration process (Sectorial Commission for the MERCOSUR, 2000).

MERCOSUR's integration process.

The creation and integration process of the MERCOSUR idea has been driven by governance administrations (largely presidents) without popular participation. Presidents of the involved countries felt that an opening discussion of the merits of integration would have frozen the process of integration (Pena, 1996). Because of that, the private sector and in particularly business looked at the union with scepticism. The explanation of that position finds its origins in the disappointing experience with regional integration in Latin America and the fear of smaller countries, such as Uruguay, regarding the size and development of the Brazilian industry. Moreover, the Brazilian private sector was largely indifferent to the process that was going on. However, the business sector in general reacted very quickly to the new environment of opportunities. The rapid increase in trade and investment flows is the vivid proof of that reaction. Some industries, such as automobile, wine, poultry, and plastic, played an active role in order to put forward their vested interests in relation to the negotiation of the common external tariff and the list of exceptions to it (Foreign Trade Information System, 2002).

MERCOSUR's Development

After the creation of the MERCOSUR, exports from the region increased very rapidly. However, there was a considerable setback during 1998 and 2001 due to an economic crisis affecting all countries of the region.

The following table shows the evolution of exports within and outside MERCOSUR since the treaty was signed.

Table 7: Exports Within and Outside MERCOSUR. 1991-2001 (US millions)

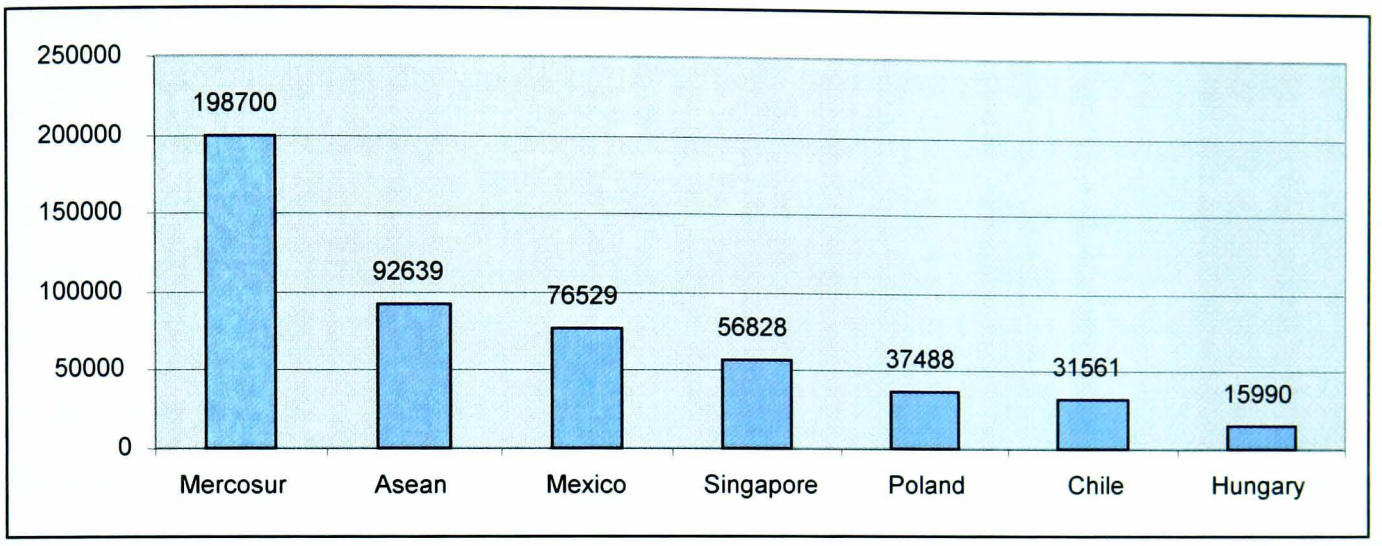
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Total	45.89	50.46	54.12	62.11	70.40	74.99	82.34	81.32	74.32	84.65	84.27
% Growth	-1.1	10.0	7.3	14.8	13.3	6.5	9.8	-1.2	-8.6	13.9	-0.4
Outside MERCOSUR	40.78	43.24	44.09	50.15	56.01	57.96	62.28	60.97	59.15	66.96	74.74
% Growth	-3.5	6.0	2.0	13.7	11.7	3.5	7.5	-2.1	-3.0	13.2	11.6
Within MERCOSUR	5.10	7.21	10.02	11.95	14.38	17.03	20.05	20.35	15.16	17.69	9.53
% Growth	23.6	41.4	38.9	19.3	20.3	18.5	17.7	1.5	-25.5	16.7	-46.1
Intra/Total	11.1	14.3	18.5	19.3	20.4	22.7	24.4	25.0	20.4	20.9	11.3

Source: Adapted from IDB Periodic Note on Integration and Trade in the Americas (2002).

One of the objectives of MERCOSUR is to try to attract foreign investment. In the present very competitive international markets, where countries make great efforts to offer attractive conditions to investors, the creation of a tariff union could be a competitive advantage since it grants on some occasions a propitious frame to attract capital. Many international firms see these blocks as an interesting alternative in which to create a base, in order to supply the block's markets. These regional trade blocks lead to increased merger and acquisition activity, joint ventures and strategic alliances as a way of entry to these markets for firms located outside it (Peña, 1998). For example, MERCOSUR's chemical industry witnessed unprecedented levels of mergers and acquisitions between 1992 and 1997. The number of mergers and acquisitions increased 103% during the mentioned period. US companies were at the forefront of investment followed by EU companies as the second most active dealmakers (Guillerme de Sa, 1998). Even with all the problems that this union has been facing and with the changes that are still needed to reach the proposed objectives, MERCOSUR has been a major recipient of foreign investment (Comisec, 2004).

The following table shows that MERCOSUR has received a great part of the foreign direct investment among developing countries.

Table 8: Foreign Direct Investment Cumulative Flows 1989-2000 (US millions)



Source: Adapted from CEI based on World Bank (2001).

Foreign enterprises have increased investment in the region and there are attractive opportunities for new investment in the infrastructure sector, particularly in areas that will require huge building projects, such as energy, telecommunications, transportation and tourism. For instance, Enron Corporation one of the major energy companies in the US invested more than $2 billion of a budgeted total of $3 billion for MERCOSUR (de Onis, 1998). Penske logistics opened an operational base in Sao Paulo to provide import and export supply-chain management services in Brazil and the MERCOSUR market. Japanese car companies have also invested heavily in Argentinian plants to produce for export to the rest of the MERCOSUR countries. Still other multinational agribusiness companies such as Parmalat have made a succession of investments in the region (Comision Sectorial Para el MERCOSUR, 1998).

The economic stability during the nineties encouraged the food industry within MERCOSUR members to invest in processing and packaging equipment. Growth in packaging has been driven by growth in the food industry, with constant new product launches in a wide variety of packaging. The entry of international companies into the Argentinian and Brazilian food processing and packaging industry, through either acquiring or investing in local companies, has raised the level of competition and induced processing plants to update in order to address cost competition and higher export demand

in some food sectors (US Department of Commerce International Trade Administration and Market & Compliance, 1999).

Best prospects in the Argentinian and Uruguayan markets include: dairy and meat processing equipment; vacuum filling/packing; filling under modified atmosphere; dry packing; vertical filling; and pouching. Brazilians have imported products such as: meat and poultry processing and preparation machinery; bakery machinery and equipment; dairy equipment; and testing, inspection and control machinery (US Department of Commerce International Trade Administration and Market & Compliance, 1999).

Social condition.

An assessment of the effectiveness of MERCOSUR would be incomplete unless social conditions are also evaluated during the process of free trade and integration. The reality shows a contrast between some economic parameters and social ones. Even though MERCOSUR has brought economic growth to the members of the union, this economic development has coexisted with increasing unemployment and an increasing proportion of population living below the poverty line. In all founding members of the union, urban unemployment increased between 1990 and 1999: in Argentina from 7.4% to 14.5%; in Brazil from 4.3% to 7.6%; in Paraguay from 6.6% to 9.4%; and in Uruguay from 8.5% to 11.3%. Table 5 shows an increase of the urban population below the poverty line for Argentina. For the rest of the MERCOSUR countries there is no information available.

Table 9: Population Below the Poverty Line (Percentage)

	Survey year	Urban %	Survey year	Urban %
Argentina	1995	28.4	1998	29.9
Brazil	1990	13.1		
Paraguay	1991	19.7		
Uruguay				

Source: Adapted from The World Development Indicators (2004).

MERCOSUR has implied a restructure of the market, which in turn brought about a decline of living conditions for many segments of the society. In the new market many workers lacked the skills to meet new job demands (te Velde, 2003). Another effect of the growth model has been a drop in real wages and a disproportionate growth of the

unregistered sector of the economy as the state reduced its regulatory role (PNUD, 2001: Organization of American States, 2004).

Table 10: Household Final Consumption Expenditure (US millions)

	1990	2002
Argentina	109,038	62,158
Brazil	273,952	263,710
Paraguay	4,063	4,649
Uruguay	6,525	8,836

Source: Adapted from The World Development Indicators (2004).

Distribution of income and poverty.

Several studies show that precariousness, informality and underemployment increased throughout the decade, especially for workers with a low education level (Bucheli, 2005). MERCOSUR has also failed to bring a solution for the problem of income distribution. Currently, the region's income distribution is among the most unequal in the world (Birdsall, Graham, Sabat, 1998). For instance, in Brazil, 10% of the population has 50% of total income and accounts for nearly 50% of total consumption being the most unequal country in Latin America (Mecham, 2003).

The Gini coefficient is one of many measures that describe how income is distributed amongst households. The Gini index provides a convenient summary measure of the degree of inequality. In Uruguay, in 2000 the Gini coefficient climbed to 44.6 after fluctuating between 40.0 and 42.3 between 1985 and 1995 (when MERCOSUR started to fully operate). This trend is particularly significant in the case of wage income; a larger dispersion of salaries contributed to the worsening of distribution problems (Katzman, Filguera, Furtado, 2000).

Table 11: Distribution of Income or Consumption (Percentage)

	Survey year	Gini Index	Lowest 10%	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%	Highest 10%
Argentina	2001	52.2	1.0	3.1	7.2	12.3	21.0	56.4	38.9
Brazil	1998	59.1	0.5	2.0	5.7	10.0	18.0	64.4	46.7
Paraguay	1999	56.8	0.6	2.2	6.5	11.5	19.5	60.2	43.6
Uruguay	2000	44.6	1.8	4.8	9.3	14.2	21.6	50.1	33.5

Source: Adapted from The World Development Indicators (2004).

Education level was the largest factor explaining the increasing inequality of wage income of the union (Arim & Zopolo, 2000). MERCOSUR continues to lag behind some other developing regions, such as East Asia, in both the quantity and quality of education needed to correct this. For instance, Brazil's expenditure on education makes up 5% of its GDP, which is insufficient and tends to concentrate on university-level education (Arim & Zopolo, 2000).

According to some researchers the neoliberal economic model underpinning MERCOSUR and supported by The World Bank and The International Monetary Fund (IMF) has increased poverty as a result of the reduced long-term commitments to social provision (Gwynne & Kay, 2000; Cammack, 2001). In the same way Robbins (1996) and Robertson (2000) argue that trade liberalization, globalization and foreign direct investment have not brought the benefits to the poor that were predicted. On the other hand, some critics state that what has failed it is not the model but its institutions, which are either corrupt or inefficient (Institute for the Integration of Latin America and the Caribbean, 2001).

Integration is a process that must take into account solidarity, cooperation, and democratic governance. Moreover, one of the aims of the union should be to combat poverty and exclusion (Organization of American States, 2004). In 1998 a Social and Labour declaration was signed by MERCOSUR's members. It recognized many social aspects such as freedom of association, collective bargaining, the right to strike, the elimination of forced labour, and special protection for children. However, the declaration was not accompanied with the required system of laws to enforce its implementation. Currently, there is a gap between declaration and practice: members say one thing but do another. Therefore, harmonization of labour policies with the principles that MERCOSUR'S members have already ratified must be addressed. In order to do that, it is imperative to create an independent judicial body (Organization of American States, 2004).

Another flaw of MERCOSUR is that by focusing on improving only economic and commercial aspects, it has forgotten to take into account the role of the environment. Its policies consider only the relations between labour and capital. Because of that, the formation of MERCOSUR has attracted many companies looking for the benefits of a market with favourable tax structures and less severe environmental laws (Guillerme de Sa, 1998).

It has been assumed that multinational companies have better environmental performance than domestic companies due to more efficient production and management and updated technology. It has been also assumed that multinational companies will maintain parent-country's environmental standards in the subsidiaries (Hodges, 1995). Even so, there are many examples to corroborate that this is not always what happens. For instance, in Brazil privatization of natural resources has led to decreased regulations regarding timber harvesting (Dudley *et. al.*, 1995). American logging companies are responsible for a large part of Amazon deforestation. The size and power of these multinational corporations can translate into great political influence. Such influence can be gained through financial contributions or bribes. By using their power, American logging companies have influenced the Brazilian government to develop policies that are not in line with environmentally friendly exploitation. These kind of practices are less likely to happen in the U.S where the environmental impact of logging companies is closely monitored by the government (Margullis, 2003).

What are the Benefits of the Customs Union to Uruguay?

The formation of a common market brings the advantage of utilizing the resources in the most efficient and productive way by the companies of the bloc. This is possible because the common market enables resources to be transferred freely. The dynamic effects are the economies of scale, the increased competition, and the effects on the terms of trade. The increase in size leads to a lowering of unit cost for individual companies that increase the level of production in a regional economic integration. This fact induces individual firms to grow in size as they have a bigger market to supply. It is also expected that regional economic integration will bring about competitive benefits, as the competition among the firms will be intensified. It is a fact that the industries involved in existing business in countries participating in a new regional union, have to conduct a review of their operations to become competitive within the new environment (Daniels & Radebaugh, 1998).

Uruguay is the smallest country of the union and therefore it would be tempting to think that its economy would benefit from integration into the much larger market of MERCOSUR. However, in reality during the process of integration many Uruguayan companies went bankrupt and the future of others is still in doubt due to a lack of competitiveness. The main problem for some Uruguayan industries has been that they were

not able to compete effectively in a regional market without tariff barriers (Ruiz, Arenare. Moretti, Saavedra & Grasso, 2003a).

The most difficult issue that the Uruguayan companies have had to address has been to try to reduce their high labour costs in order to become more competitive. Brazil has very cheap labour and the advantage of being a much larger scale producer (Hewson, 1995). The economy of Uruguay is strongly affected by any measures taken by its partners within MERCOSUR but especially by those taken by Brazil and Argentina, who are the main importers from the Uruguayan markets. For instance, in 2003, 55% of Uruguayan exported goods were destined for the union. The US is the other important partner in the Uruguayan economy; in 2002 it received 7% of Uruguayan total exports and purveyed 12% of the country's imports. Even though there have been some problems, the union has been an important tool for the Uruguayan economy in that since its establishment it has helped to increase exports within the MERCOSUR market (Comisec, 2004).

In theory trade transactions are carried out without adoption of any tariff system within the MERCOSUR trade block. However, this regime is not actually implemented. The member states of MERCOSUR negotiated what has come to be called an "Adaptation Regime" by which some products (integrating the most sensitive sectors) traded among the four countries will, for a time, continue to pay duties. In addition non-tariff barriers have protected some industries from competition. For example, at the moment a non-tariff barrier protects the Uruguayan chicken industry. The goal is to eliminate all tariff and non-tariff barriers among the countries of the union. According to what has been negotiated by MERCOSUR's countries, the customs union would be in full effect before January 1, 2011 (Comisec, 2004).

Is MERCOSUR Working as a Customs Union?

Since the first agreement was signed in 1991 MERCOSUR members have made considerable progress towards the liberalization of intra-regional trade flows. Moreover, the block has reduced both tariff and non-tariff barriers with non-members of the union and has moved in the direction of a customs union due to a large percentage of common external tariffs (Paiva & Gazel, 2003). However they have not been able to eliminate all tariff and non-tariff barriers and effectively enforce a common external trade policy (Olarreaga & Soloaga, 1998; Bouzas, 2001). Besides, since 1999 the regional trade flows

have suffered the impacts of opposing macroeconomic and exchange-rate policies. As a result some opinion makers have questioned the viability of a customs union in South America.

The short story of MERCOSUR is full of ambiguities and conflicts in relation to the adoption of common trade policies. The reality shows that the customs union has only been partially implemented and its viability has been questioned not only by the private sector but also by some government officials (Heymann, 1999). Currently there are many national regulations such as non-tariff restrictions, which prevent the free circulation of merchandise among MERCOSUR countries.

The main obstacles faced by the common external tariff since the customs union started are described as follows:

i. temporary tariff reductions for some products to face supply constraints;
ii. renegotiations of bilateral preferential agreements with other members of the Latin American Integration Association (ALADI);
iii. subsistence of special import regimes (Baumann, 1998);
iv. optional increase in national tariff rates of up to three percent; and
v. a special authorization to Argentina in 2001 to provisionally reduce to zero the tariff rate on capital goods and to raise to 35% the tariff rate on consumer goods (Bouzas, 2001).

MERCOSUR's Potential Drawbacks

MERCOSUR has promoted trade within the group at the expense of trade with a number of outsiders. By doing this it is the opinion of some scholars that the South American customs union might limit member countries' access to high-technology imports from industrialized countries, which are an important stimulus for technical diffusion, skill upgrading and growth (Moran, 1998; Connolly, 1998).

One of the consequences of the differential treatment between member and non-member countries is a shift in the member countries' sources of supply. As a result of this shift the cost of sources can be either lower or higher. For instance, by lowering barriers within MERCOSUR, members are encouraged to import from one another goods they had

previously produced at higher cost for themselves. This in turn allows for greater efficiency in production and a decrease of consumption prices; both changes enhance national income. The increase in welfare is a result of resources being allocated more efficiently (trade creation). However, the external tariff may cause MERCOSUR countries to import goods from a high cost member country rather than from a low cost outsider (trade diversion). The result of this is a reduction of tariff revenues and protectionism for less efficient producers compare to their counterparts in other countries (Chudnovsky & Porta, 1997).

An interesting study conducted by Yeats (1998) looked at how products that accounted for an increasing share of intra-MERCOSUR trade performed in external markets. His results show that for some goods, performance is quite different in internal and external markets. For instance, manufactured goods (particularly machinery and transportation equipment) have increased a lot in intra-MERCOSUR trade but represent only a small percentage of MERCOSUR exports to non-member countries. This suggests that members are importing from one another goods that are not competitive in markets without protection.

In theory, MERCOSUR countries lose the possibility to gain from the technological diffusion that occurs through trade between developed and developing countries. Since MERCOSUR is a union of developing countries its countries might be losing the possibility to learn from the high technology embodied in imports from developed countries. According to the Connolly (1998) study, any shift in import products that diminishes access to high technology will slow the rate of economic growth in member countries. Thus, the trade diversion that is happening in some MERCOSUR industries should be a cause of concern.

Jurn and Park (2002) examined the trend of intra-regional trade flows and extra-bloc trade flows with US and Canada after the consolidation of MERCOSUR. The first issue highlighted by the study is that in spite of the crisis that hit MERCOSUR members after 1998, the intra-MERCOSUR trade has increased since its formation in 1991 (refer to table 8). Therefore, MERCOSUR members have become more dependent upon each other.

Table 12: Intra-regional Trade in Goods (Based on exports FOB in US millions)

	Exports to MERCOSUR				Imports from MERCOSUR			
	Argentina	**Brazil**	**Paraguay**	**Uruguay**	**Argentina**	**Brazil**	**Paraguay**	**Uruguay**
1980	1,136.1	1,810.3	124.6	347.9	1,307.7	996.2	612.3	502.7
1985	667.5	990.2	82.2	212.6	627.0	699.8	380.0	245.7
1990	1,832.7	1,320.2	379.2	595.0	782.8	2,241.3	534.4	568.8
1992	2,326.9	4,098.5	246.4	544.3	3,354.9	2,127.2	825.5	908.5
1993	3,686.9	5,394.6	287.2	661.4	4,002.2	3,395.5	1,33.5	1,294.9
1994	4,803.1	5,921.8	424.8	900.0	4,608.7	4,472.0	1,576.2	1,392.0
1995	6,778.4	6,152.8	528.1	992.1	4,391.5	6,595.0	1,957.0	1,507.9
1996	7,924.2	7,305.0	659.6	1,152.1	5,536.9	7,966.5	1,958.3	1,579.2
1997	9,600.5	9,043.7	584.8	1,355.2	7,224.9	9,530.9	2,090.6	1,737.8
1998	9,421.3	8,877.0	530.7	1,532.5	7,413.4	9,233.6	1,955.2	1,759.3
1999	7,071.2	6,777.7	307.5	1,006.6	5,785.9	6,481.4	1,388.4	1,506.7
Average Annual Growth Rate for 1990-1999								
	18,39%	22,69%	-2,59%	6,79%	28,41%	14,19%	12,68%	12,95%

Source: Adapted from Statistical Yearbook for Latin America and the Caribbean (2000).

To study the global welfare impacts of MERCOSUR, the authors examined the trade effects with US and Canada. As it can be seen in table 9, the trade flows of US and Canada with MERCOSUR have been markedly expanded since 1990. It can be concluded that the MERCOSUR bloc did not contribute trade diversion to non-members such as the US and Canada.

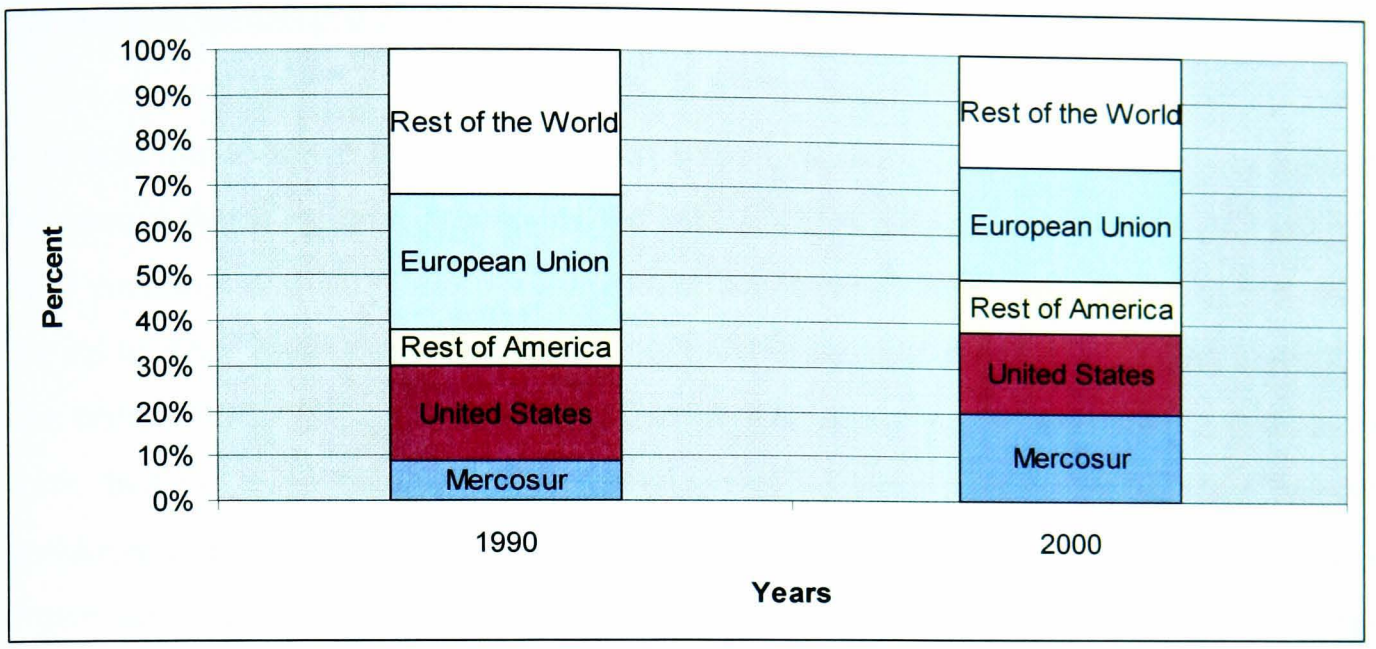
Table 13: Trade Flows and the Trade Intensity Index (TII) of Canada and US with MERCOSUR (US millions)

	CANADA			US		
	Exports to Mercosur	**Imports from Mercosur**	**TII**	**Exports to Mercosur**	**Imports from Mercosur**	**TII**
1990	492.17	843.88	0.50	6,693.44	9,744.10	2.11
1992	638.18	707.13	0.43	9,620.17	9,166.74	1.96
1993	746.27	723.24	0.39	10,608.30	8,986.94	1.66
1994	897.90	819.22	0.37	13,661.36	10,655.69	1.72
1995	1,156.96	900.65	0.39	17,021.58	10,815.91	1.71
1996	1,221.59	994.76	0.39	18,614.74	11,355.45	1.67
1997	1,543.69	1,172.10	0.39	23,185.81	12,123.31	1.63
1998	1,188.67	1,146.62	0.34	22,404.90	12,622.06	1.61
1999	874.42	1,190.38	0.32	19,194.56	14,158.88	1.73
Average Annual Rate (%)						
	7.45	4.39		14.08	4.78	

Source: Adapted from the US Census Bureau (2000).

Figure 7 shows how the patterns of growth by destination have changed since the formation of MERCOSUR. The most noteworthy changes were the increase of exports within the region, an increase of the rate of growth of exports to the rest of the Americas and a reduced share going to the EU and the rest of the world.

Figure 7: MERCOSUR's Export Composition by Destination



Source: Adapted from Feenstra (2000) and Economic Commission for Latin America and the Caribbean (Cepal 2001).

The Future of MERCOSUR

The future of MERCOSUR is still uncertain. Some authors argue that the current impasse is a consequence of many circumstances that includes divergent interests, a deficit of regional leadership, and the failure to develop a cooperative agenda (Bouzas, 1999).

Neither Brazil nor Argentina, the biggest partners of the MERCOSUR, market have been able to play a leadership role. For instance, Brazil the largest partner in MERCOSUR has shown modest commitment and the explanation to that behaviour can be found in two factors: one structural and the other policy-induced. The structural factor refers to the size asymmetries, a factor that may limit the economic gains to be harvested from MERCOSUR. The policy-induced factor refers to the perception that the expected trade-offs to be gained from the union have failed to materialize (Nogues, 2001).

Over the last few years MERCOSUR has been the centre for many conflicts rather than for the promotion of cooperative objectives. Moreover, a large part of the industrial sector of Argentina and Brazil that has grown, thanks to the old policies inherited from the import substitution era, and there are strong lobbying groups that have vested interests in avoiding structural adjustment to the world market (Panagariya, 2000). This adjustment is of vital importance for whether MERCOSUR wants to become an open region after a long period

of import substitution. Another problem is that governments are uncertain about acting as one political entity when it comes to external trade relations issues. If these problems are not targeted the integration process will be further delayed.

It is also fair to say that there have been some international factors that have negatively influenced the integration process of the MERCOSUR union. For example, in 1997, the Thai economy crashed. Due to international interdependencies, the impacts of that crisis spread to other Asian countries, then Russia and eventually South America. As a result of this crisis MERCOSUR as a whole suffered a deep recession and the recovery took more time than in Asian countries. The reasons for the slow recovery were that financial problems went hand in hand with the breakdown of relevant markets in Asia for Latin American exporters, and a dramatic downturn of commodities prices (Preusse, 2001). Because of that, members of the union focused all their efforts on emergency measures rather than the integration processes. Looking at these facts it could be concluded that the present stagnation of the process of region building is temporary (Valls Pereira, 1999).

In spite of all the described difficulties, at one of the last MERCOSUR summits, all presidents of the member partners decided to negotiate with the EU and the Free Trade Area of the Americas (FTAA) as a single entity. This proves that MERCOSUR is still progressing and that political relations are deeper and more stable (Baumann, 2001).

Recently, closer political ties (especially between Brazil and Argentina) have boosted the process of the Southern Common Market. After overcoming the negative impacts of two serious setbacks such as the Brazilian currency devaluation in 1999 and the collapse of Argentina's economy in 2001, it seems that now MERCOSUR is prepared to continue progressing. The current stabilization of the region along with the election of three presidents with very similar ideas in mind has brought positive views to the union. In addition a protocol for creating a MERCOSUR parliament is expected to be signed by the end of 2008.

Cristina Kirchner of Argentina and Luiz Inacio Lula da Silva of Brazil, both left-wingers, have committed themselves to strengthening the regional customs union with the rest of the members. Moreover, Uruguay's election in October 2004, replaced Jorge Batlle a Merco-sceptic president with Tabare Vazquez, a Merco-phile one. Therefore, presidents

with similar ideologies will run the three bigger economies of the block. All of them are keen on fostering regional integration and broadening it to Andean countries to secure MERCOSUR's members a stronger voice in global trade negotiations. Companies within the region have great expectations on what the new politicians can do. For instance, the automotive industry has made a big investment, thinking that the free trade agreement could be achieved in 2010 (The Economist Intelligence Unit Limited, 2004).

As the history of MERCOSUR has proved, practicing integration is a very difficult task. MERCOSUR is an odd quartet integrated by countries with extremely unequal power (Sifuentes, 2001). In that union Brazil cannot afford to subsidize its three partners as Germany did at one moment to promote the EU. Besides, Argentina's economy is too small to play the sponsoring role of Britain. In addition all four members are prone to economic crises, which they spread to each other. For MERCOSUR to become a customs union it will have to overcome not only regional problems but also the negative influence of the US that has tried to erode the consolidation of the union. Critics argue that US efforts are mostly against Brazil, which has the biggest industrial base of the region that is still mostly independent of US corporations (Katz, 2002).

The reality shows that more than a decade after its formation, MERCOSUR has accumulated more success than failure. Nonetheless, the described domestic and international shocks have eroded the credibility of the integration process. If MERCOSUR really wants to consolidate as a serious block the implementation of the following policies should be considered:

i. harmonization of macroeconomic policy;
ii. validation of the common external tariff;
iii. microeconomic integration; and
iv. adaptation of the institutional structure to the needs of the union (Gonzalez, 1999).

In order to facilitate the integration of the countries of the region, the infrastructure of transport needs also to be addressed. The current precarious transportation system is obstructing the exchange of goods, people and information, not only within members of the region but also with the rest of the world. For instance, 50% of intra-MERCOSUR trade passes over just two bridges ("Foz do Iguacu" and "Paso de Las Liebres"). It is very

common to see bottlenecks at both bridges resulting in delays of at least three days (Economist, 2004).

Summary

This chapter has presented a discussion of the pros and cons of regional trade. There are divergent theories addressing the advantages and disadvantages of regional trade agreements. Nevertheless, most researchers support the view that regional agreements bring economic benefits to member countries. In MERCOSUR some economic parameters have improved but at the same time social conditions have deteriorated. Therefore, if social parameters are taken into consideration, the benefits of regionalism are not evident in this union.

The information within this chapter indicates that MERCOSUR members have become more dependent on each other. Because all members are developing nations it could be argued that MERCOSUR members trade goods that are not competitive internationally. The available data is not enough to conclude whether the block has suffered from trade diversion.

The future of MERCOSUR is unknown. However, the latest events indicate that the regional integration process is likely to continue progressing. Even though Uruguay has clearly increased its exports within MERCOSUR market, several uncompetitive companies have collapsed during the integration process. Therefore, Uruguayan government policies should help domestic companies prepare to face the competition from its counterparts from Brazil and Argentina.

Most economic theories do not address environmental issues. MERCOSUR is a vivid example of a block that has addressed the environment only theoretically. As a result of a lack of commitment towards the environment there are many examples of environmental impacts across all MERCOSUR's members. Chapter 5 now provides a critical review of the relationship between trade liberalization and environmental protection. Within this context the chapter assesses what could happen to the Uruguayan broiler industry if the cost of production was internalized.

Chapter 5

Environment Politics and Trade Liberalization

This chapter presents the relationship between trade liberalization and environmental protection. It also discusses the importance of incorporating environmental policies into free trade agreements. Then the chapter critically reviews market failures with particular attention to the MERCOSUR region. The chapter ends with an assessment of what could happen to the Uruguayan chicken industry if the cost of production was internalized.

Economics and the Environment

Over the last three decades environmental issues have started to be considered more seriously and there has been an increase of initiatives to tackle environmental impacts. For a long time many economists failed to recognize the importance that the natural environment must occupy in any economic policy (Rosenbawn, 1995). Due to the overexploitation of nature, many environmental problems have emerged both in developed and developing countries. The problem with the traditional model was that it failed in recognizing the services provided by the natural environment (Hussen, 2004). However, the increasing importance placed by the public on environmental protection coupled with the impact of global environmental change is so large that scholars of politics can no longer ignore environmental issues. The American debate over NAFTA demonstrated to some extent the powerful influence of environmentalist and public force. After much deliberation, the Bush government had no option but to stress NAFTA's environmental regulations in order to gain public acceptance (Stevis & Assetto, 2001). Environment politics has always been a controversial topic due to the complex interaction among science, politics, and economics (Portney, 1992; Kauffman, 1994). At the international level the long debate over global warming is one of the best examples of the complexities of the decision-making process on environmental issues.

The Relationship between Trade Liberalization and the Environment

The end of the Cold War, market deregulation, trade liberalization, and export-driven interest created the right scope for regional economic integration and trade liberalization. MERCOSUR is a prime example of a sub regional initiative of the beginning of the 1990s in Latin America (Tussie, 2003). Trade liberalization has expanded backed up by The

General Agreement on Tariffs and Trade (GATT) and The World Trade organization (WTO). The decline of costs of transportation, the improvement of productivity of goods, and an increase of trade volume, which is a result of trade liberalization, has brought about an increase of the use of natural resources and polluting activities (Imai, 2002). As a consequence, more attention has been put on the relationship between trade and environmental conservation. The most important issues that stem from this relationship are: the environmental impact of trade and trade policies; the potential effects of environmental measures on trade flows; and the use of trade measures to achieve environmental policy aims (Kamal & Imai, 2003).

Many conflicts have arisen as a consequence of divergent opinions between those organizations promoting trade liberalization and those that demand environmental protection (Brenton, 1994). There are three different approaches toward the relationship between trade and the environment. The first one is the neoclassic approach, which stresses the dangers of environmental policy for the trade system. The environmental trade approach is the second one and argues a positive relationship between trade and environmental quality. The main argument of liberal economists is that trade liberalization leads to economic growth which in turn generates the resources to tackle environmental degradation. The third approach, supported by some ecological economists, puts in doubt the ability of the trade system itself to promote ecological sustainability. They state that the environmental and social impacts of trade must be integrated into trade theory (Leveson-Gower, 1997).

There are numerous studies that have analysed the relationship between trade and the environment in regional free trade areas, such as NAFTA and the EU (Barnes & Barnes, 2000; Grant, Duncan, Newell, 2001; McCormick, 2001). These studies have shown that increased trade and investment have a direct impact over the environment. Therefore, most scholars acknowledge that trade liberalization must go hand in hand with adequate environmental policies in order to avoid more pollution and unsustainable resources use (Nordstrom & Vaughan, 1999). However, some empirical evidence states that trade growth will generate funds for environmental protection and result in reduced environmental impact (Grossman & Krueger, 1993). Other studies show mixed results (Shafik & Bandyopadhyay, 1992; Antweiler, Copeland & Taylor, 1998).

Most opinion makers agree that the trend towards freer trade is likely to continue. Simultaneously, governments of developed and developing countries are under pressure to deliver environmental improvements. Because of that pressure, environmental policy has started to play a role in affecting the business arena. Policies can sometimes create business openings and sometimes they can act as barriers to trade. Therefore, the trade-environment debate has a key role for business (Cairncross, 1995).

Free Trade Agreements and Environmental Policy

From a theoretical point of view, addressing environmental concerns improves the performance and attractiveness of multilateral trade agreements. Omitting to consider environmental issues could put in danger the potential for harvesting the full benefits of trade liberalization. If the agreement fails to internalize environmental externalities there is a risk for overexploitation of common resources and therefore, a decrease of the trade-derived gains in social welfare. Therefore, free trade agreements should incorporate, at the beginning, adequate environmental policies for preventing potential negative effects (Booth, 1998).

The multilateral trading system has identified the protection of both, human health and the environment as relevant objectives of public policy since the General Agreement on Tariffs and trade treaty was signed in 1947 (Fraenkel, Stein, Shang-Jin, 1997). However, the importance for environmental protection and achievement of sustainable development was made more explicit in the Uruguay round, signed in 1994 in Marrakesh by more than 120 countries, which established the WTO agreement (Hoekman & Kostecki, 1996; World Trade Organization, 1999). Nevertheless, many environmentalists argue that in spite of the commitment to sustainable development in its preamble, the WTO's main objective is the promotion of free trade. Therefore, environmentalists and non-governmental organizations (NGOs) pointed out that trade interest will always outweigh environmental protection (Biermann, 2000).

In general terms, proponents of free trade agree with environmentalists that legitimate environmental protection measures should be safeguarded. However, proponents of free trade are concerned about these provisions being used by some governments as disguised non-tariff barriers to prevent the free flow of goods. Conversely, environmentalists argue that by pursuing free trade liberalization blindly, national environmental product standards

could end up being lowered. This is a very complex topic with many players having a say. For instance, industrialists are worried that the costs of high environmental provisions could make them lose competitiveness against foreign firms not matching the same environmental standards. Freer trade and a healthier environment should not be on different paths; they are both key contributors to social welfare (king, 1996). Empirically, environmental protection started to be considered seriously since trans-boundary environmental problems became more obvious during the 1970s and the 1980s. Nevertheless, only a few scholars recognised at that moment the relationship between trade and the environment (Siebert, Eichberger, Gronych & Pethig, 1980).

Institutional structure and environmental regulations.

The institutional structure is the main difference between the way that the environment is treated under the WTO agreements and some regional trade agreements and partnerships (RTAs). Environmental provisions for environmental measures are part of the various agreements in the WTO. However, several RTAs have addressed environment issues through the formation of separate protocols. MERCOSUR is a prime example among the RTAs where a protocol on the environment has been the tool to deal with the environment in general (Ryan, 2000).

The institutional structure of RTAs is the result of the aspirations to improve the levels and enforcement of environmental regulations. For some RTAs this has been a priority to prevent the lowering of domestic environmental standards and regulations to attract investment (Ward & Brack, 2000). The Canada-Chile Free Trade Agreement is a good example of an agreement that aims to avoid the shift of investment due to differences in environmental provision standards.

The short history of regional trade agreements has shown that the degree of achievement in terms of environmental regulations vary a lot between those groups that aim for economic integration and those that only aim at trade facilitation. The EU, the most economically integrated RTA has been able to set environmental standards for all its members. The EU has a supra-national authority where the protection of the environment entails a major role (Knill & Lenschow, 2000). In addition, article 6 of the treaty specifies that environmental protection and sustainable development must be taken into account in the definition and implementation of the EU policies (Insausti Muguruza, 2001).

NAFTA is the other best known example of a regional trade liberalization agreement. The way this block has addressed environmental regulations differs from what has been done by the EU. In NAFTA there is a side agreement on environmental cooperation to oblige the three members to enforce their own environmental laws. Environmental stipulations in NAFTA result from the lobby of strong environmental groups in the US and the general consensus that environmental regulations are a competitiveness factor because low environmental standards are advantageous to a trade partner (Beukel, 1999).

The viewpoint of many scholars is that the EU model has addressed the negative environmental impacts of freer trade in a more efficient way than the NAFTA agreement. When there are different levels of economic development the EU provides technical and financial assistance to address the problem of lax environmental standards or indirect environmental subsidies. This model has helped the less developed countries of the EU to raise their environmental protection regimes. On the other hand, NAFTA has not considered any kind of assistance to less developed economies and therefore concerns for the enforcement of Mexico's environmental provisions will likely persist (Bulmer-Thomas, Craske & Serrano, 1994; King, 1996).

The high standard that the EU holds in terms of environment friendly trade rules has been built on the following basis:

i. All EU members have the right to ban imports from other member states that do not comply with national levels of health, safety and environmental protection. The European Court of Justice (ECJ) is the authority entitled to enforce environmental regulations. In addition the EU also provides for upward harmonization of member states environmental, health and safety standards. For instance, by the end of 1992 the EU had harmonized seventy-five sanitary and phytosanitary measures and eighteen food law measures (Steinberg, 1995).
ii. EU rules allow banning of imports coming from outside members with poor environmental standards or not produced in accordance with specified EU process and production methods.
iii. Transboundary remediation aimed to remediate specific cases of pollution (Bernauer, 1995).

iv. The environment institutions belonging to the EU are better developed, perform more functions, and allow more participation by nongovernmental actors than those of the rest of the world trade organizations (Barnes & Barnes, 2000).

The EU and NAFTA are only two of the multiple trade agreements now in place but these two regional trade agreements are both the most sophisticated and integrated of the current regional trade blocks. In addition, trade and environment themes were largely discussed making these two blocks good models for comparison. Therefore, MERCOSUR should learn from the success and failures of these regional trade agreements.

In contrast to the above-described agreements, most free trade agreements except the United States-Singapore free trade agreement (USSFTA) in the Asia-Pacific region and the Canada-Chile Free Trade Agreement have concentrated on trade liberalization and environmental issues have not been seriously considered. The reasons for that stem from the fact that many developing economies perceive the inclusion of environmental provisions as a form of disguised protectionism by developed nations who, according to them, use environmental standards as non-tariff barriers aimed to erode developing countries' competitiveness. In spite of that some changes have started in the so-called new-age agreements, which are placing more relevance to the integration between trade and environment (Kamal & Kenichi, 2003).

Market Failures: Externalities and Public Goods

In chapter two of this thesis, the concept and theories about customs unions were briefly described. These theories do not agree about the benefits of customs unions. However, the main drawback of all of them is that they failed to consider the case of environmental externalities. Some contemporary economists argue that environmental problems can be viewed as market imperfections. Environmental problems are according to these authors the responsibility of economic policies that have forgotten to internalize environmental externalities and include them in market prices (Braden, Former & Ulen, 1996).

One characteristic of environmental goods is the generation of externalities when they are used up. An externality creates interdependence between two or more groups of people, and this interdependence is unpriced. Many externalities arise when the community uses a public good for example, waterways to discharge its residues. The externality occurs once

the public good has become degraded. If the externality cost is ignored and the production increases it is possible to end in an environmental disaster. At this point the environment ceases to be a receptacle for wastes (Caldwell, 1984; Weale, 1992). In order to avoid an environmental disaster government intervention is necessary. The governments should try to reach a reasonable level of production by internalizing the externality. To do that, they have to evaluate the externality and they have to be able to quantitatively specify the externality cost function. Then the government could impose a tax in order to shift the production curve to a sensible level or impose a quota restriction on the product. Other examples to correct market failure are trade-able emission permits and subsidies for developing new technologies (Dasgupta, 1991; Tietenberg, 1994; Braden et al., 1996). Through these policies it is possible to protect the environmental goods and to maintain the flow of services they provide (Hanley, Shagren & White, 2001).

A peculiarity of the environmental issues is that the dividing line between local, national, translational, and global environmental issues is difficult to draw. Because of that any fixed line is arbitrary (Runge, Ortalo-Magne & vande Kamp 1994). The only way to address transnational environmental issues in a world divided into independent states is by setting multiple forms of inter-state environmental agreements (Johnston, 1996).

For some environmental opinion makers trade liberalization has increased competition among member countries encouraging lower regulatory environmental standards in order to attract foreign investment. In that scenario, an increased industrial activity would magnify pollution and consumption of fossil fuel augmenting the impacts on an already stressed environment (Steel, Clinton & Lovrich, 2003). These authors also argue that trade liberalization might be responsible for changing the location of polluting activities. They argue that due to global trade liberalization corporations will shift production to countries with less stringent environmental regulations. On the other hand, economists such as Robert Repetto (1993) states that foreign investment has not been allocated toward polluting industries in countries with less stringent standards like South Korea, Malaysia, the Philippines, and Thailand. There is not much data to corroborate the shift of industries to low standard jurisdictions. Industrial relocation depends on many factors such as labour costs, transportation expenditures, and access to markets. Therefore, unless the difference in environmental costs between two countries is enough to offset the factors above described, there is no reason for a shift to occur.

MERCOSUR's Environmental Impacts

The natural ecosystem of MERCOSUR has been heavily exploited. As a result of freer trade in the region the MERCOSUR union has witnessed many environmental disasters linked to large-scale infrastructure projects and to the increase of export industries. MERCOSUR's largest environmental problems include: soil degradation, air pollution, acid rain, and water contamination. The degradation of soils is a key environmental problem among South American countries because their economy relies on primary products; many of them depend on the soil's richness (Goodland & Ledec, 1987). This damage is the consequence of policies that have put emphasis on economic growth but have not considered environmental safeguards seriously. For example, the northeast of Uruguay suffers the negative impacts of acid rain that is the result of uncontrolled industry emissions in the Brazilian border. Acid rain is impacting the agricultural region surrounding the Uruguayan city of Cerro Grosso. In spite of Uruguayan officers' claims of public health deterioration and damage to crops, the Brazilian government plans to increase plant production (Gudynas, 2001).

One of the worst socio-environmental impacts of trade liberalization among MERCOSUR member countries can be found in the agriculture sector. The case of wheat cultivation dislocated from southern Brazil that was absorbed by Argentina is an example of these impacts (Beghin, Roland-Host & van der Mensbrugghe, 1994; Miranda, 1994). Brazilian wheat farmers were for years subsidized as a matter of national food security. With dislocation to Argentina, a country with more productive soils and therefore lower production costs, the impacts upon Brazilian wheat farmers have been devastating. As a result the Brazilian system of rotation, which alternated wheat with soybean, was replaced by continuous soybean provoking greater erosion and a higher exposure to risk for the farmer (IPARDES, 1994). Moreover, trade liberalization has forced small farmers to impose further stress on fragile natural ecosystems (Boyce, Fernandez, Furst & Segura, 1994). Hence, MERCOSUR must introduce and enforce legal and institutional measures across the members of the union in order to force producers to operate within the region of assimilative ability and higher stability. When these concepts are ignored the society faces economic, environmental and health costs which result in a reduction of the economic gains harvested from the increase of trade (Araya & Esty, 2002).

The study conducted by Beghin, Bowland, Dessus, Roland-Host, and van der Mensbrugghe (2002) demonstrates that environmental taxes on air pollution induce health benefits, which are larger than the economic loss that is the result of taxation. This study was conducted in Chile to analyse the environmental impact that MERCOSUR would have on this country if Chile decides to become a member of this union. The authors also argue that policy reforms aimed to reduce pollution would increase real income in Chile.

The development of the regional infrastructure must maintain the quality and quantity of the natural resources provided by the ecosystem. Economic programmes should not only consider the increase of production, but also environmental impacts and the stimulation of those initiatives that contribute to the conservation of natural resources (Runge, 1992). The economies of all MERCOSUR members rely on the endowment of their natural resources. Even though there are some pieces of legislation addressing environmental issues, the reality is that the exploitation of natural resources is not in line with environmentally friendly practices. It seems that the MERCOSUR governments do not realize that in pursuing this model, they are draining the resources that the economy relies on and at the same time are producing contamination and generating residuals (Grandi & Bizzozero, 1998; Sifuentes, 2001).

MERCOSUR's Environmental Agreements

Environmental concerns are in theory considered to be on the region's agenda. MERCOSUR reports include a chapter addressing the condition of the union's natural endowments. Originally the preservation of the environment was at the centre of the treaty. In fact the second paragraph refers to the sustainable use of MERCOSUR's natural resources. In June 1995 the lead authority of MERCOSUR decided on the creation of the Working –Subgroup on the Environment "Subgrupo de Trabajo 6 Medio Ambiente" (SGT 6). This group was responsible for the development of the environmental policy guidelines which aimed to protect the environment and the principles of sustainable development in the integration process. Ministries for the environment of the member states coordinate the group (Secretaria Administrativa del MERCOSUR, 2005). In 1999, the Protocol of Harmonization of Norms was approved in regard to "industrial garbage". Nevertheless, because of the differences among the environmental legislature in the Member States, due to a different vision of each country about the care of the environment, it was decided to analyse each non-tariff restriction on an individual basis. As a result a new project was

created but it is still being analysed. Two years later the MERCOSUR Environmental Agreement was adopted but it is only a framework document, which proclaims the intention of future action. This new document contains only ten articles and it does not oblige MERCOSUR member's to comply with any environmental regulation. The important environmental issues have not yet been tackled and the agreement does nothing but leave the doors open for future possible agreements. However, the four original members have ratified a set of the recent regional environmental agreements on trade in endangered species, toxic wastes, ozone depletion, climate change, biodiversity, and wetlands preservation (Sifuentes, 2001).

The reality shows that environmental agreements of the MERCOSUR union are weak and have declined during the course of the integration process. The latter Environmental Framework Agreement is only a small step toward sustainable development in the region. The agreement does not address important environmental topics such as the precautionary principle and it entails only a vague commitment to work on environmental issues (Leichner, 2001). Moreover, the environmental agency has a weak institutional status that reflects the low importance given to environmental issues (Devia, 1998). The negotiators of the treaty were concerned about the environment only to the extent that environmental regulations could constrain trade in the forms of non-tariff barriers. The weakness of environmental provisions in MERCOSUR is the result of continuous refusals by the region's trade, foreign ministers, and presidents to permit stronger regional environmental protections. The uncertainty about the economic integration of the block is another factor limiting environmental protection to move forward (Devia, 1996).

In spite of MERCOSUR's countries improvement in terms of environmental protection at national level during the process of integration, there is no commitment of any member to transfer these improvements into the regional agreement. Looking at the information presented above it is clear that the environmental dimension of MERCOSUR economic integration is addressed differently than in NAFTA and the EU.

Some of the aspects that need to be seriously addressed by the MERCOSUR union are:

- a need for environmental dispute resolution (Sifuentes, 2001).

- the creation of an institution to track and evaluate the potential environmental impacts of new and expanding trade and investment patterns (Leichner, 2001).
- elaborating the channels for public consultation and public participation, and
- the creation of a plan for federal legislation in each of the member countries aimed to enforce national environmental codes (Villegas, 1999).

There is not much research about the relationship between environmental politics and regional trade agreements in a customs union where all participants are developing countries (Beukel, 1999). In spite of this, there is a general consensus that environmental problems are more difficult to resolve for countries that still have significant development needs and aspirations (Tussie, 2000). The increase in economic activity within a free trade region is considered more likely to lead to increased environmental degradation in developing countries because of two reasons. Firstly, the export structures of developing countries are usually based on natural resources, which show a greater negative impact from trade compared to industrial production. In MERCOSUR, primary products accounts for about 55% of exports. Secondly, developing countries lack governmental capacity or popular pressure to force mitigation of environmental impacts. By the end of the day, MERCOSUR politician's performance is going to be measured in terms of economic growth and not much attention is going to be put on environmental degradation. This statement does not mean that the people of South America are indifferent to the environment; however, the largest proportion of society does not place the environmental problem within the scope of trade negotiations (Schaper, 2002).

According to Beukel (1998), developing countries show less interest than developed countries in including environmental provisions in trade liberalization agreements. The reason for that behaviour relies on the viewpoint that trade and economic growth will provide the funds to tackle the largest environmental problems.

The comparative advantage of MERCOSUR countries in the international trade arena relies on cost advantages. Some politicians state that by incorporating environmental regulations into their development efforts what they are doing is creating new barriers for developing countries (Hochstetler, 2002). As it was already mentioned the economy of MERCOSUR union relies upon primary commodities. Because of this, policy strategies

aiming to internalize environmental costs would be unrealistic if they are not enacted at global level. If MERCOSUR countries decide to adopt environmental regulations, they would be losing their competitiveness in foreign markets unless the rest of commodity producers decide to follow the same policies. It would be unlikely to think that MERCOSUR would adopt stringent environmental protection in the short term (May & Bonilla, 1997).

How Competitive Could the Uruguayan broiler industry be if the Cost of Production was Internalized?

In a supposed scenario where the cost of production was internalized Uruguayan competitiveness could change. Uruguayan industry has the highest labour cost of the region. This is result of employee protection laws that are more severe than MERCOSUR neighbours. For instance, no person under the age of eighteen years old is allowed to work under the current Uruguayan labour legislation. In addition Uruguay has a well-organized security system to ensure that employers contribute the right amount of money to the State, which is the administrator of the pensions of low-income workers. In Brazil, on the other hand, there are plenty of workers under eighteen years old and in many occasions the employers avoid their responsibilities with the security system (Bouzas, 2001). Therefore, looking at social issues, in a future scenario where a common social legislation would be enacted among all members of the union, Uruguay would have a competitive advantage.

Brazilian Environmental Policy

On the other hand, the competitiveness of the Uruguayan industry could be negatively affected if environmental issues are taken into consideration. Comparing the situation among MERCOSUR members, Brazil, one of the possible competitors that could put in danger the feasibility of the Uruguayan chicken industry has the most extensive and thorough environmental protections. It is the only country where the court system plays an increasing role in enforcing legislation. The slowness of the introduction of genetically modified organisms and the construction of a water superhighway are clear examples for environmental policy making in Brazil (Paarlberg, 2001; Hochstetler, 2002). However, Brazil struggles with numerous environmental problems such as Amazon deforestation, air pollution, basic sanitation and water services (Glassen & Nemesio Neves, 2000).

In spite of the number of environmental problems that are still to be resolved, Brazil is many steps ahead of its MERCOSUR's partners who will have to do a lot of work before matching Brazil's levels of formal environmental protection. Moreover, Brazil's environmental legislation is considered among the most advanced in the world (Guimaraes, 1995). Because of that, by the time the environmental costs of production was internalized Brazil's industries would have a competitive advantage.

Brazil's environmental politics has its origins in 1973. At that time, a national environmental agency was created to develop environmental protections. This agency reached ministerial status in 1985. Since that moment, Brazil has been producing environmental legislation and regulations. Examples of these are: the gathering of existing environmental legislation and institutions into a National System on the Environment in 1981, the empowerment of environmental organizations which have legal standing to bring lawsuits in defence of common interests, and in 1998 penalties for negative environmental impacts were increased (Senado Federal, 1991; Fernandes, 1998).

Uruguayan Environmental Policy

It is also fair to say that Uruguay has committed itself to start looking at environmental issues more responsibly. For instance, even though developing countries are not forced to reduce gas emissions, Uruguay has shown a significant commitment to international climate agreements (Gupta, 1999). Uruguay is party to the United Nations Framework Convention on Climate Change (UNFCCC), and became party to the Kyoto Protocol in 2001. In 1997 it submitted its Initial National Communication (Ministerio de Hacienda y Medio Ambiente, 2002). The Uruguayan government has edited inventories of greenhouse gas emissions for 1990, 1994 and 1998, following the Intergovernmental Panel on Climate Change (IPCC) guidelines. The application of these guidelines determines parties' contributions to the intensification of the greenhouse effect, and assesses the problem in the country as a whole. This process facilitates an examination of the viability of mitigatory measures (OPYPA, 1996). In 1990 the Ministry of Housing, Territorial Ordering, and Environment was created. This department was responsible for the development of a basic set of environmental legislation. The challenges are to build executive and societal capacity to implement the legislation. A cause for concern is the fact that Uruguay lacks experts for effective studies of environmental impact (Gudynas, 1998).

Argentinian Environmental Policy

Uruguay occupies the second place in terms of environmental protection followed some steps behind by the other two members (Evia, 2002). Argentina lags behind due to its environmental protections which are undeveloped in comparison to its other political institutions. Argentina created an Environmental Secretariat in the Ministry of the Economy in 1973. The secretariat was dissolved in 1975 and there was no environmental department until 1991 when former president Carlos Menen reconstructed a National Environmental Secretariat (Hopkins, 1995). In 1999 under the government of Fernando de la Rua the National Environmental Secretariat was moved into the Ministry of Social Development. As a result the department lost the power of action. Recent administration has further diminished the role of environmental organisations (Hochstetler, 2002). Paraguay's less severe environmental protections are the consequence of a generalized lack of political institutionalization. The new constitution in 1992, after the dictatorial regime, laid out the basis for the first national environmental agenda (Dominguez & Prieto, 2000). Before that environmental protection was only addressed in the form of a patchwork of municipal ordinances for Asuncion, and some national legislation that had been written for other purposes (Diaz Labrano, 1998). In 2000 Paraguay moved forward and created a National Environmental Secretariat for the first time.

In spite of Brazil being ahead of its MERCOSUR partners, all members have failed in recognizing the real value of the endowments of the region. The MERCOSUR's Environmental Subcommittee has little institutional power in comparison to other institutions of the union and an agenda limited to trade promotion issues. Because of this lack of power the only institution addressing environmental impacts has failed in trying to make environmental issues a significant component of the MERCOSUR process. The only role played by the Environmental Subcommittee is to work on specific issues assigned by the CMG. Moreover, in its eight years of life the Environmental Subcommittee handled only one significant resolution to the CMG for approval; and the CMG turned it down. In addition, neither the Environmental Subcommittee nor any other institution of the block has the capacity to evaluate environmental impact assessment. This contrasts with what happens in other trade unions such as NAFTA or the EU where environmental institutions have formal power (Stevis & Mumme, 2000).

The current situation will remain unchanged unless a supranational MERCOSUR commission with the resources and authority to enforce environmental laws to protect natural endowments is created. Part of the government's output must be spent on the environment as a way to slow down the entropy process and hence to prolong the existence of natural resources (Sifuentes, 2001).

There is a general conviction that economic growth is good for the countries and that the free market will balance out the world economy. But the situation is more complex than this and a continuous growth of output does not guarantee more jobs, a better environment or social equality (Connelly & Smith, 2003). MERCOSUR is a good example of economic growth not being able to solve unemployment, inequity or environmental problems. MERCOSUR countries have adopted GDP growth rate as the main standard to measure economic progress. The main drawback of this system is that considers 'man-made' capital but forgets to take into account natural resources. Therefore, GDP offers no protection for natural resources and it is in conflict with their conservation (Repetto, Magrath, Wells, Beer & Rossini, 1989; Solorzano, De Camino, Woodward, Tosi, Watson, Vazquez, Villlalobos & Jimenez, 1991). Pursuing economic growth blindly may put in danger the prosperity of the region because of the environmental costs of such a strategy (Comision Nacional del Medio Ambiente, 1998).

Some MERCOSUR government agents argue that economic growth will reduce poverty, which will increase environmental protection and restoration, leaving no need for explicit provisions for the environment. Some critics do not agree with their idea and argue that non-renewable resources cannot be restored once they have been depleted. If one-day a developing country's economic growth has been enough for its people to live with no privations, it may be too late for the environment to recovered (Goodland & Daly, 1993).

Summary

The relationship between trade liberalization and environmental protection is a broad and complicated topic. Evidence suggests that policies aimed to improve competitiveness should give room to environmental issues. Trade liberalization has brought about economic benefits to many industries in some countries; however, it has also brought environmental impacts when environmental issues were not seriously considered.

Even though there are different approaches towards the relationship between trade liberalization and the environment, none of them denies the impacts of increasing trade on the environment. Therefore, MERCOSUR must incorporate environmental policies to prevent its natural endowments from being overexploited. MERCOSUR's authorities should learn from the EU which is the regional trade block that has developed the best model to try to protect the environment. If MERCOSUR's authorities do not empower their environment institutions, the largest environmental problems affecting this trade block are likely to worsen.

Policies aiming to improve the competitiveness of the Uruguayan broiler industry must incorporate environmental policies. These policies must ensure that Uruguayan levels of environmental protection are at least the same of Brazil, the country with the most developed environmental policy of the block. A good environmental legislation would bring benefits not only to the Uruguayan broiler industry but to the rest of agriculture industries on which the Uruguayan economy relies.

Chapter 6 now reviews the main aspects of the MERCOSUR broiler industry. It then focuses on the Uruguayan broiler industry. One of the sections provides a review of agriculture in Uruguay and the role it plays for the Uruguayan economy.

Chapter 6

The Tendencies and Characteristics of the MERCOSUR Broiler Industry

After providing the reader with an understanding of the relevant aspects of the world poultry industry, this chapter critically analyses the tendencies and characteristics of the MERCOSUR poultry industry. The chapter starts by covering relevant literature on the Argentinian and Brazilian poultry industry respectively. It then continues with an insight of the main geographic, socio-cultural, and economic aspects of Uruguay. Within this context, major barriers to the free flow of food and transport network limitations are discussed. Then the chapter discusses the main aspects of the Uruguayan broiler industry including its development, economic importance, structure, and organization. To develop the country-level industry analysis different government sources mentioned below where used. The information presented in this section is based on poultry reports (secondary data). When visiting government institutions, eight government employees that had been directly involved with the Uruguayan broiler industry were interviewed. Primary data collected during these interviews is presented in chapter eight along with qualitative data collected from owner-directors and managers from the Uruguayan broiler industry. The last section describes different types of chicken reared in MERCOSUR and trade policies restricting chicken trade between members of the union. Finally, those internal and external relevant factors that may be of interest for an economic group to invest in the Uruguayan broiler industry are presented.

Uruguay is part of the South American poultry industry and as MERCOSUR is part of this continent Uruguay might be affected by what happens in some neighbouring countries. The growth of the South American poultry industry has been explosive over the past 20 years. This growth can be explained because of expansive markets, competitiveness, and high productivity. In respect to the demand for different types of poultry meat, the 90-95% of consumers prefers chilled meat and the rest frozen meat, (except for Brazil where the percentage is reversed) and 80-90% consumes the bird in its whole carcass form. 60% of the poultry world production is produced in developing countries, Latin America, with only 9% of the world population, accounts for the 17% of the total birds produced worldwide. Brazil without doubt is the main producer and has the advantages of low cost,

cheap labour force, high competitiveness, international experience, high consumption and high technology (Viandes, 1998).

Table 14: South America Poultry Production. 2006

Country	N° of Broilers	N° of Hens	N° of Turkeys
Argentina	385,000,000	18,000,000	0
Bolivia	90,000,000	2,500,000	30,000
Brazil	4,600,000,000	64,000,000	42,000,000
Chile	172,000,000	8,000,000	7,500,000
Colombia	400,000,000	25,000,000	500,000
Ecuador	100,000,000	8,000,000	250,000
Paraguay	19,000,000	1,500,000	0
Peru	340,000,000	9,300,000	2,200,000
Uruguay	25,000,000	2,500,000	0
Venezuela	360,000,000	8,500,000	800,000

Source: Adapted from Watt Poultry USA (2006).

The increase in the consumption of chicken meat in the MERCOSUR countries was due to the following factors:

i. The efforts of marketing and promotion.
ii. Higher incomes of part of the population of the region particularly in Brazil.
iii. An improvement in the price relationship between chicken and its meat competitors (Cavever, Talamini, Campos & Santhos Filho, 1997).

Argentinian Broiler Industry

In the case of Argentina, one of the possible competitors of the Uruguayan broiler industry, the economic reform process that started in 1992 has forced surviving poultry companies to adopt new technology and to improve the efficiency of production. These changes have been responsible for a decrease in the cost of poultry production and a decrease in chicken imports from Chile and Brazil even with the cumulative increase of the domestic consumption of 4% per year (Barbado, 2004). Improvement in the efficiency of production was the main responsible factor in leading Argentina to become an exporter country. The *per capita* consumption of chicken in 1998 was 26 kilos. The huge increase in the consumption of this meat taking into account that in 1991 it was 10.5 kilos *per capita* was due to the change of price and eating habits that brought about transference of the consumers from red meat to chicken meat (Rivera, 2003; Barbado, 2004).

Twenty years ago the price of one kilo of chicken was the same as one kilo of the best cut of beef meanwhile today it is equivalent to the cheapest cut of beef. Argentina exported $88 million of fresh and processed poultry products during the first 11 months of 2005. The volume of exports totalled 68,411 metric tons between January and November 2005, up 80% from 37,912 tons in 2004. Argentinian's main poultry export markets are: Japan, Saudi Arabia, Germany, Holland, South Africa, and China (Secretaria de Agricultura, Ganadera, Pesca y Alimentos Republica Argentina, 2006). The most important challenge for the Argentinian poultry industry comes from Brazil. During periods of economic crisis Brazil has exported to Argentina even with prices below that of its domestic market.

Brazilian Broiler Industry

Brazil is highlighted because of its exports that account for 35% of the total international trade (FAO, 2005). One interesting characteristic of the Brazilian industry is that it was able to adapt itself very quickly to the changes and new demands of the world market and by 1996 the sales of poultry meat cuts were over 50% of the total (Cavever et al., 1997). Domestically, Brazilian poultry production has been channelled through the big supermarkets. In spite of the fact that 39.5% of Brazilian poultry production is sold as whole birds, there has been a continuous shift to further processed products in order to add value to this food chain (Knee & Nall, 2005).

Since 2002 Brazilian poultry production has increased steadily and the world has witnessed the expansion of Brazilian poultry exports. As in all MERCOSUR countries, chicken production is the core of the poultry industry accounting for 97% of poultry production. Economists envisage an increase of 5% in 2006 to 9.5 million metric tonnes from the previous year's record high production (Knee & Richard, 2005). This growth has been attributed to market promotion efforts coming from the Brazilian government and the poultry industry. It is worth acknowledging that the industry has benefited from the impacts of avian influenza in Asia that devastated the Asian poultry industry, giving Brazilian firms the chance to access to new markets. The main export markets in 2004 were the Middle East accounting for 30.5% of the exports; Asia 26.6%; EU 17.7%; Africa 10%; Russia 7.9%; South America 3.5%; Central America 2.7%, North America 0.9%; and Australia-New Zealand 0.2% (Knee & Richard, 2005).

In 2004 Brazil overtook the US as the largest chicken meat exporter. According to the Brazilian Chicken Producers and Exporters Association the export volume would have been even larger if it had not been for the barriers that the Brazilian exporters faced such as an embargo from the Russian Federation (Knee & Nall, 2005). It is interesting to look at the following table, which compares production costs between Brazil and the US.

Table 15: Comparative Production Costs between Brazil and the US

	Brazil	**US.**
Cost of raising a live bird	$0.40	$0.50 to $0.54
Cost of processing a bird	$0.20	$0.60 to $1
Feed corn costs Per metric ton	$70 to $90	$90 to $120
Soy meal costs Per metric ton	$180	$180 to $220

Source: Adapted from Knee and Nall (2005).

Brazilian poultry success relies on its incredible climate for growing grain, cheap and dedicated labour, and a group of entrepreneurs that built plants like cathedrals that were always being updated (Hewson, 1995; Smith, 2005). Another factor was Brazil's ability to tailor products to its customers needs. Brazil exports to more than 1,000 counties and foreign inspectors are very strict about the levels of quality before granting or renewing an export permit. This situation is contrary to the US one, which exports its surpluses in order to maintain prices on the domestic market (Parker, 2004). The main challenge for the Brazilian poultry industry will be to try to overcome logistic constraints, particularly inland. This is a problem of many food industries in Brazil. Port congestion and road congestion could limit the volume of exports in the forthcoming years (Knee & Richard, 2005).

The Brazilian poultry industry entails a high level of concentration where the top ten firms account for 55% of production and 85% of exports. At the domestic level competition from other meats is not expected to affect poultry demand, as poultry meat is cheaper and the industry has been building a good range of options such as frozen and precooked meals. The industry has targeted all social classes offering affordable products to the less affluent and branded further processed products for the upper classes (Smith, 2005).

Brazil and Argentina are global leaders in the production of maize and soya due to the quality of their soils, and the benefits of the climate. This provides core elements for poultry food (Tucker, 1993). For example, Brazil has taken over the position of the US as the former lead producer of soya, while Argentina has the cheapest cost of maize production of the world (Lee, 2006). Looking at the information presented above it is clear that Brazil will be the main threat to the Uruguayan chicken industry not only because of its cheap price but also its quality of production. In 2000 there was an inspection of the companies of Brazil made by a UK Ministry of Agriculture Fisheries and Food veterinary chief and the conclusions of the report were that nine out of ten Brazilian processing plants were as good as any in the UK and that plant hygiene standards were very high (Ministry of Agriculture Fisheries and Food, Government Statistical Service, 2000). A table with the main companies of MERCOSUR poultry producers is presented below.

Table 16: MERCOSUR's Broiler Producer Leaders. 2006

ARGENTINA			
Company	City	N°. Broilers (000)	Breed
Fepasa	Concepcion	11,000	Ross/Cobb
Frigorifico Soychu S.A.	Gualeguay	22,000	Cobb/Ross
Indacor	Cordoba	6,200	Cobb
Las Camelias	Entre Rios	17,000	Ross
Miralejos	Androgue	18,000	Ross/Cobb
Prosavic	Buenos Aires	8,000	Cobb
Rasic Hnos S.A.	Buenos Aires	59,000	Ross
Sanchez y Sanchez	Santa Fe	8,500	Cobb/Ross
Super	Entre Rios	8,000	Ross
Tres Arroyos	Buenos Aires	68,000	Cobb
BRAZIL			
Company	City	N°. Broilers (000)	Breed
Aurora	Chapeco	95,000	Cobb/Ross
Avipal	Porto Alegre	225,000	Ross/ISA
Big Frango	Rolandia	50,000	Ross/Cobb
Coopavel	Cascabel	34,000	Ross/Cobb
Copacol	Cafelandia	75,000	Cobb/Ross
Dagranja Alimentos	Curitiba	105,000	Ross
Frango Sertanejo	SJ de Rio Prieto	50,000	Cobb
Frangosul S.A.	Montenegro	286,000	Cobb/Ross
Lar	Matelandia	44,000	ND
Pena Branca Alimentos	Sao Paulo	75,000	Ross/Cobb
Penasul Alimentos	Caixas do Sul	42,000	Ross/Cobb
Perdigao Agroindustrial	Videira	546,000	Cobb
Sadia	Concordia	618,000	Ross/Cobb
Seara (Cargill)	Itajai	273,000	Cobb/Ross
PARAGUAY			
Company	City	N°. Broilers (000)	Breed
Avicola La Blanca	Asuncion	15,000	Ross/Cobb

Pollpar	M.R. Alonso	4,000	Ross/Cobb
URUGUAY			
Company	City	N°. Broilers (000)	Breed
Calpryca	Montevideo	6,480	Ross
Pollos Tenent (Casa Quinta)	Montevideo	6,480	Ross
Avicola del Oeste	Montevideo	3,780	Ross
Avicola San Bautista	Toledo	2,970	Ross
Avesur	Toledo	2,970	Ross
Avicola del Remanso	Montevideo	2,430	Ross
Avicola Frontini	Melilla	1,890	Ross

Source: Adapted from Industria Avicola (2006).

Agriculture in Uruguay

Before analysing poultry development in Uruguay, this section presents an overview of the general geographic and socio-cultural environment of the country and in particular the main agriculture products on which the Uruguayan economy relies. It provides the reader with a better understanding of the development of Uruguayan agriculture products. It also briefly discusses major barriers to the free flow of food and intra-regional trading and transport network limitations.

Geography and Demography in Uruguay

Uruguay is located in the southeast region of South America. It borders to the north with Brazil, to the east with the Atlantic Ocean, to the south with the River Plate and to the west with Argentina. It is much smaller in size than its neighbouring countries, Brazil and Argentina, the big players of MERCOSUR union. The climate is temperate, rather humid and variable, with no major differences between summer and winter due mainly to the sea's influence (Uruguay XXI, 2007).

According to the last census the Uruguayan population reached an estimated 3,164,000, 91% urban and 9% rural (Instituto Nacional de Estadisticas, 2003). Montevideo, with a population of 1.5 million inhabitants, is the capital of Uruguay, as well as its main port and political and economic headquarter. The country has a well-developed network of main roads as well as minor roads and is connected to Argentina by two bridges crossing the

Uruguay River. Short distances and the well-developed highway network allow reaching any of the two main ports (Montevideo and Nueva Palmira) from any point of Uruguay in less than six hours (Garcia, 2002).

The Uruguayan ecosystem is mainly composed of smooth rolling hills covered with natural pastures and without important geographical irregularities. Topographically it is located between the Brazilian plateau and the Pampa plains. Its area is 176,215 square kilometres of plain pastures and low hills, which offer no great problem for raising cattle and cultivating crops (Estadisticas Agropecuarias, 2006). Most of the national territory is used for arable crop, sheep, and beef farming, the number of hectares exceeding 15 million. Beef and sheep production take place in 13.4 million hectares, arable crop production occupies 600,000 hectares, and fruit production is developed in 33,000 hectares with horticulture production being developed in 9,000 hectares. The forestry industry has been continuously expanded due to investment of international capitals; it currently occupies about 700,000 hectares (Bartesaghi, 2007).

Economic Importance of Agriculture in Uruguay

Agriculture at present accounts for 38.1% of the economy measured through Gross Domestic Product (GDP) and occupies 320,000 workers. The official number of farms was 50,000 at the last census. Agriculture is a relevant sector for the Uruguayan economy representing 75% of Uruguayan exports (Uruguay XXI, 2007). Uruguay exports a wide range of agriculture products such as soya, wheat, rice, dairy products, vegetable oils, beef, fish, fruits, and wool. Its competitiveness is mainly based on the quality of its soils, a favourable climate, relatively low logistic and labour force costs, and spare industrial capacity. The quality of Uruguayan agriculture products is recognized worldwide. This factor has helped Uruguayan companies on some occasions to conquer markets that later on were accessed by its bigger neighbours Brazil and Argentina (Bartesaghi, 2007).

International prices play an important role for those commodities that are exported, as Uruguay takes international prices, because its volumes of production are too small to influence world prices. Uruguay is a country that fully supplies its internal demand for agriculture products with own production. However, in years with specific problems, such as a big drought or the incidence of fusarium (fungus), mills have had no choice but to

import grain from neighbouring countries to supply the domestic demand (Ministerio de Agricultura Ganaderia y Comercio, 1999).

Farming in Uruguay

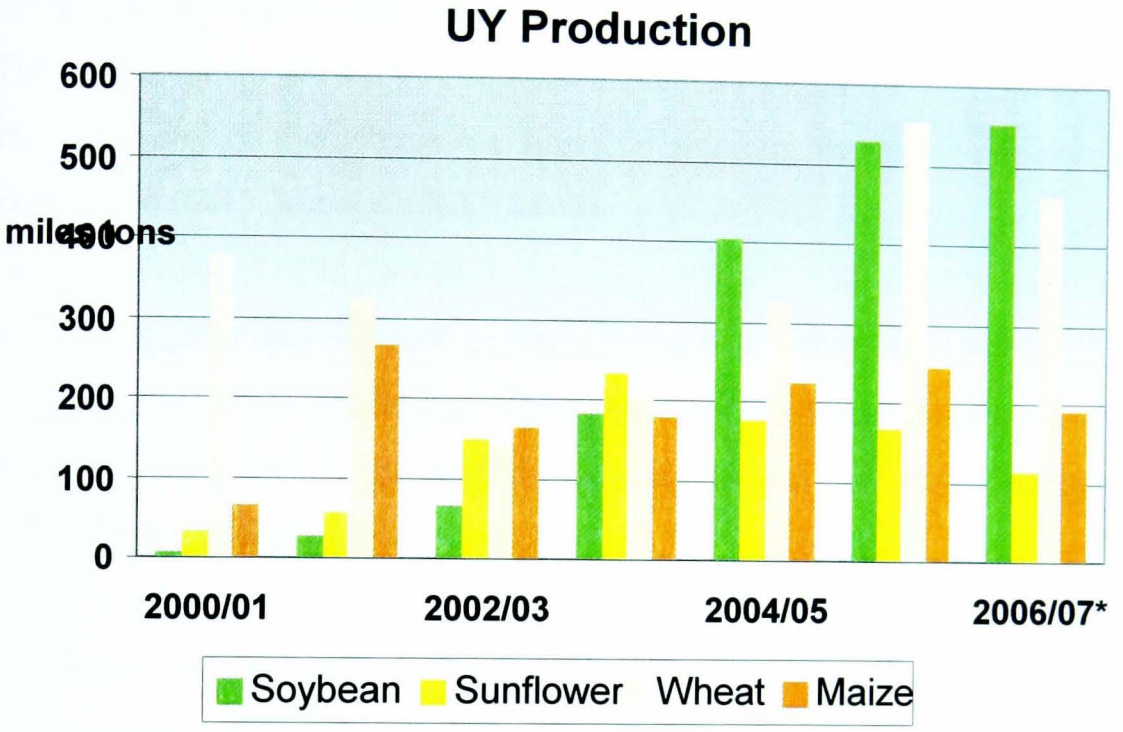
Beef farming in Uruguay is carried on jointly with sheep farming in most of the territory with a total herd of 9 million to 11.5 million head. The farming system is based on the pasture feeding provided by the natural prairies, complemented by sown prairies or natural prairies with sown legumes. Traditionally it is exceptional to use grain for beef production. However, this is changing because the strategic use of grains for cattle feeding is being gradually adopted (Instituto Nacional de Carnes, 2007). Beef production reaches an annual average of 440,000 tonnes net weight of which 183,000 tonnes are for domestic consumption, and 257,000 tonnes are exported. The exports of the freezing plants represent approximately 25% of the Uruguayan exports representing the cornerstone of the Uruguayan economy (Instituto Nacional de Carnes, 2007).

Uruguay has the world's third highest annual *per capita* beef consumption at 43 kg, after Argentina (56 kg) and the United States (44.8 kg). All beef cuts are popular in Uruguay: high-quality lean and tender cuts from British breeds are demanded by consumers with high purchasing power, while beef for "asado" is very popular among less affluent consumers. In Uruguay the annual *per capita* chicken consumption is estimated at 18 kg, significantly below beef consumption. However, chicken meat occupies the second place in the consumption of total meats. Broiler consumption is expected to continue growing gradually as prices have dropped significantly in the past years causing it to become very competitive. The amount of chicken consumed has been growing at a rate of one kilo per year. Beef is largely consumed in urban areas, while lamb and mutton are consumed predominantly in rural areas. Lamb *per capita* consumption is 11 kg. In contrast with what happens in other countries neither fish nor pork makes up an important part of Uruguayan diet (Instituto Nacional de Carnes, 2006).

Arable crop farming in Uruguay is spread throughout 600,000 hectares located mainly in the west of the country, near the border with Argentina. The exception to this is rice, located mainly in the east and north of the country. Since the year 2000 Uruguayan crop farming has witnessed important changes. The expansion in the area of soya coupled with continued increase in demand for crops mainly from Asian countries have brought about

dynamism to the grain sector. The impact of soya was so large that it changed the traditional area of summer crops in Uruguay. Cost-benefit ratios and the ability to colonize new agriculture fields has positioned soya as the leader of the Uruguayan crop rotation (Perez, 2002).

Figure 8: Changes in Uruguay Crop Area



Source: Adapted from Uruguay XXI (2007).

The other changes affecting the dynamism of the sector were the adoption of direct sowing and the use of transgenic materials. In addition some Argentinian policies, jointly with the difference in price per hectare between Uruguayan and Argentinian lands, have been responsible for many Argentinian farmers coming to invest in the south west of Uruguay. this has brought even more dynamism to the grain sector in a country where traditionally beef production has been the cornerstone of agricultural activity (Paruelo, Guershman, Pineiro, Jobbagy, Veron, Baldi & Baeza, 2006).

Uruguayan agriculture is mainly rain-fed, with two differentiated growing seasons. Planting of the first "cultivos de invierno" goes from June to August with harvesting from November to December while planting of the second "cultivos de secano" goes from September to December with harvesting from February to May. Irrigated land is only used for rice, horticulture, and not very frequently for corn (Martinez, 2006).

Major Barriers to the Free Flow of Food and Intra-regional Trading and Transport Network

In general terms most Uruguayan agriculture entrepreneurs are happy with the government export policy that according to them is not creating barriers to commercialize their products (Chamber of Commerce and Exports of Agricultural Products and Agro industrial Products, 2006). However, both the small scale of production jointly with financial constraints have prevented some Uruguayan companies from exploring foreign markets. For instance there are a lot of companies that are able to put the product on the ship (FOB) but not many of them have the financial standing to ship the merchandise to the final destination (CIF) (Uruguay XXI, 2007).

The Uruguayan government is very concerned about the quality of food for human consumption. All merchandise either imported or for exporting that meets the quality norms enacted by the government does not have any major barriers to its free flow (Ministerio de Salud Publica, 2004).

Uruguay's tariff structure follows the "HS" or harmonized system of tariff nomenclature. All customs duties, surcharges, service and other charges are consolidated in a customs unified rate or "tasa global arancelaria" (TGA). The Office of the Director General of Customs may apply customs valuation when there is a question concerning a supplier's classification and/or valuation. Valuation criteria are those followed by the World Trade Organization (WTO). Tariffs on non-locally-produced raw materials, intermediate goods and consumer goods range from 2% to 20% respectively (United States of America Department of Commerce, 2005).

Quotas were eliminated in the mid-1970s, and non-tariff barriers, including reference and minimum import prices, were substantially reduced in the 1990s. Certain imports (e.g. firearms, radioactive materials, fertilizers, vegetable products and frozen embryos) require special licenses or customs documents. Bureaucratic delays may also add to the cost of imports, although importers report that a "de-bureaucratization" commission has improved matters (Comision Sectorial Para el MERCOSUR, 1998).

Reference prices and a few remaining minimum export prices were eliminated in 1994 and 2002, respectively. In 2002 and 2003, Uruguay imposed specific import duties and

inconvenient financing terms to discourage some imports from Argentina. As part of the MERCOSUR integration, imported merchandise must meet tariff requirements imposed by the trade block (Comision Sectorial Para el MERCOSUR, 1998). MERCOSUR members established an external tariff which ranged from 0-20% by product type: 0-9% for raw materials and some foodstuff; 10-15% for certain agricultural products and semi-processed goods; and 15% to 20% for textiles, manufactured goods, and consumption goods (Frischtak et al., 1996; Bucheli et al., 2005).

Limitations for exporting and importing.

The logistics of Uruguay, including the network of routes and port operating facilities, do not present any limitations for exporting. Due to short distances from the productive region, the spare storage capacity, and the location of the main ports, companies can respond to a purchase order quite fast as long as the order is of a volume that is in line with the capacity of production of Uruguayan companies. Another advantage of the transportation system is that countries such as Bolivia or Paraguay can be reached by barge, thanks to the river system linking these countries. In Uruguay when a product is exported in bulk the shipping is done at the port of Nueva Palmira while the port of Montevideo is used when a product is exported in any form but in bulk (Administracion Nacional de Puertos, 2006).

The Uruguayan road network is substantially paved and adapted to the current territorial model. It is the densest network of Latin America and the Caribbean, with 45 km paved for each 1000 km² of surface. Therefore, it is fair to say there exists an excellent accessibility to the whole national territory (García, 2002). International cargo transportation flows without restrictions through the different borderline points between Uruguay, Argentina, Brazil, Chile and Paraguay with an available fleet that has few limitations. An important point to look at is the fact that there are no significant differences of transportation costs among MERCOSUR countries when we are referring to companies that offer high quality services. At the moment, the modality of payment is per ton delivered to the agreed destiny. For complete loaded trucks there is a rough difference of about $50 in favour of Brazilian trucks' prices. But this difference is diminished because of their load capacity. Brazilian trucks have a maximum capacity of 25 tons, two less than the Argentinian and Uruguayan trucks (Garcia, 2002).

In relation to customs waiting times it is very difficult to state precise times. The only certainty that exists is that customs transactions are going to take at least 24 hours and in a number of occasions could be extended for 5 days (Perez, 2006). If all trade barriers fell. Uruguayan larger centres of consumption could be easily reached by MERCOSUR members. However, customs waiting times might on some occasions discourage foreign competitors from supplying the Uruguayan market with fresh chicken. As it will be discussed later, the Uruguayan chicken consumer does not like to consume frozen chicken.

Broiler Development in Uruguay

Uruguayan poultry is associated with chicken meat, because the consumption of other species such as turkey, duck and goose is of marginal importance in this country. In Uruguay the annual *per capita* beef consumption is estimated at 43 kg compared with poultry consumption at 18 kg (Errea & Llundain, 2007). Chicken meat occupies the second place in the consumption of total meats. Broiler consumption is expected to continue growing gradually as prices have dropped significantly in the past years causing it to become very competitive. The amount of chicken consumption has been growing at a rate of one kilo per year. The evolution of chicken meat consumption of Uruguay shows that by the year 1990 the consumption per person was 7.8 kilos and in 2006 was 18 kilos per person (Errea & Llundain, 2007).

Table 17: Relations in the Final Price of Chicken and Substitute meats (Pesos/Kg). 2007

Years	Chicken	Bottom round roast	Beef for asado	Pork ribs
2000	23.5	43.6	26.2	49.9
2001	24.7	42.6	25.8	56.7
2002	27.8	46.3	28.6	55.6
2003	41.7	66.3	44.8	75.2
2004	44.0	88.5	62.2	94.3
2005	40.7	90.0	60.2	99.5
2006	37.8	95.0	63.5	105.5

Source: Adapted from OPYPA (2007).

A Brief History of the Uruguayan broiler industry

Chicken was historically positioned as meat for special meals as during the weekend or for special occasions. At the end of the sixties the "double breast" chickens arrived in Uruguay; this meant a change in the organisation of the entire industry. At the same time, the poultry industry benefited from a government measure aimed to foster beef exports to help the economy of the country. Therefore, during the sixties internal beef consumption fell to a level that was in line with Government policy. Due to the decline of beef consumption in Uruguay the chicken industry was able to take advantage and supply consumers with chicken all year around (COMCORDE, 1968; COMCORDE, 1971). The chicken industry became dependent on the Government's measures. Some of the characteristics that originated in that period have been kept until today (Duran et al., 1999).

The Uruguayan market consumes large chickens that are slaughtered with weights well above its MERCOSUR neighbours. This fact arose as a consequence of the size of the Uruguayan family that is on average 3 or 4 persons. These birds should be of the right size to satisfy the requirements of the whole family. The chicken that is commercialized in Uruguay is more than 50 days old and weighting not less than 2.2 kilos. Most consumers prefer a chicken weighting between 2.4 kilos and 2.6 kilos (Wright, 1998).

During the sixties and seventies the birds were sold in an entire form. The sale in cuts of chicken started at the end of the eighties. This was a result of the Uruguayan society following some of the world trends. Since then, the supply of chicken has changed in its presentation to the consumer. Today consumers can find different cuts of chicken and a variety of pre-cooked meals (Ministry of Agriculture, 2006). The new presentation of chicken fulfils the necessities of a modern society in which it is necessary to highlight the increasing number of females in the work force. As a result the females have less time available to prepare cooked meals. This is the main reason for the increase in cooked ready prepared meals. However, the consumption of the entire chicken is still predominant in Uruguay (Ruiz, 1998). Another trend followed by the Uruguayan society is the growing tendency to eat chicken at restaurants, take away shops, and chicken shops. In spite of the high consumption of red meat, Uruguay has followed international trends to eat more healthily and the market has witnessed a reduction of beef in favour of chicken (Wright, 1999).

Uruguayan poultry production is located around the capital city of the country where more than half of the population lives (Instituto Nacional de Estadisticas, 2003). There is a very high concentration in the industry with only a few companies influencing the market. The chicken market targeted by the big companies is concentrated in the larger cities of Uruguay. Local producers with less technology and few sanitary measures to comply with, supply some of the rural areas of the country (Duran et al., 1999).

The dominant idea from the people involved in this sector is that there are still certain opportunities available to continue the expansion of this industry (Ministry of Agriculture, 2007). In reference to this idea the author is taking into account the case of Argentina that started with the same level of consumption as Uruguay but the level of consumption has increased faster leading to a higher level of consumption. This consideration is based on the similarities of food habits, evolution of their societies and economies. Analysing this information there is a big potential to increase consumption. Even without reaching the figures of consumption in Argentina there is a margin for the growth of this industry if the actual domestic rate of growth is maintained (Errea & Llundain, 2007).

The volumes of poultry produced in Uruguay are not significant at world level and the general rule is that the domestic price of the market is more attractive than the international one (Ruiz, 2000; Errea & Llundain, 2007). Uruguay is a marginal exporter of chicken. Taking the historic series, the maximum data was 1,326 tonnes in 1998.

Table 18: Production, Consumption, and Exports of Uruguayan Chicken Meat

Year	Production (tonnes)	Domestic consumption (tonnes)	Exports (tonnes)
1998	51,983	50,621	1,326
1999	59,224	56,525	798
2000	56,206	55,499	707
2001	54,998	54,155	843
2002	45,181	44,262	919
2003	30,686	30,679	7
2004	40,997	40,974	23
2005	48,376	48,575	199

Source: Adapted from DIEA (2006).

The Impacts of Economic Integration

The big changes of the last ten years including globalization and the advent of MERCOSUR have not affected the Uruguayan chicken industry, since it has been protected against competitive producers such as Brazil and Argentina by a 'sanitary barrier'. This protection has permitted technological investment and an improvement in the efficiency of all the links in the chicken food chain, but within the comfort of a protected environment. These changes have led to a reduction in the costs of production and therefore to a reduction in the final price of the product to the consumer (Ruiz, Lema & Errea, 2003b).

Multinational supermarkets have been investing in MERCOSUR's market for a few years. For instance, Groupe Casino (France) has retailing investments in Argentina, Brazil, and Uruguay. Managers of the multinational company believe they have reached the required size to facilitate MERCOSUR-based purchasing and distribution operations. In Uruguay Casino acquired Devoto Hermanos and Disco del Uruguay, the oldest chain of supermarkets in the country. With these two acquisitions Casino controls 61% of Uruguay's supermarket business. In Uruguay, supermarkets account for roughly one-third of the country's retail sales of consumer goods. Through Disco del Uruguay they plan to purchase supplies not only for its Uruguayan stores but also for Argentina's Supermercados Libertad hypermarket chain of which Casino owns 75%. The multinational also aims to purchase goods for its distribution business in Brazil. The strategy of the company also intends to focus on a new business: importing goods to supply the MERCOSUR market. Uruguayan supermarkets are continuously increasing their share in food sales, including meat, while small inefficient butcher shops tend to disappear, although, both offer similar prices and quality (Foreign Agricultural Service, 2001). Evidence from other countries reveals that these companies show a clear desire to purchase products from the cheapest source, irrespective of where they are in the world (Rebella, 2000; Errea & Llundain, 2007).

The Economic Importance of the Broiler Sector in Uruguay

This section presents an overview of the economic importance of the Uruguayan broiler industry. The following table shows that poultry accounts for 2.9% of the national GDP.

Table 19: Uruguayan Total Gross Domestic Product (in percentage)

Sectors	2007
Agro industrial	19.1
Agriculture	13.3
Agriculture associated industries	5.7
Poultry	2.9
Minerals	0.2
Electricity, gas and water	3.4
Construction	3.1
Commerce	8.9
Transport and communications	5.4
Finance services	20.5
Government	10.2
Others	7.3
GDP	100

Source: Adapted from Banco Central del Uruguay (2006).

The available data indicates that by the year 2006 the income generated by this activity was of $240,000,000 giving employment to around 34,000 people in a direct and indirect way (Errea & Llundian, 2007). The data of the last census indicates that the poultry industry gives employment to the 26.2% of all labour force that works in the Uruguayan agro industry (Enrich, Guidobono & Bruno, 2004). It has to be noted that the most important agriculture commodities are produced extensively in Uruguay. Therefore, industries such as poultry which are not as relevant for the national GDP as the beef industry (main product exported), play an important role as providers of employment.

The Uruguayan broiler industry importance can be also seen through the amount of grain consumed by the sector. It is estimated that poultry in Uruguay consumes roughly 250,000 tonnes of grain per year. Of the 250,000 tonnes 70% of this is sorghum and maize. Available data indicates that poultry consumes 65% of the total Uruguayan production of maize, more than 50% of the total production of sorghum, and about 40% of the total production of sunflower. It is clear that the development of the poultry industry has brought dynamism to the Uruguayan grain industry (Ruiz et al., 2003a).

Investment in infrastructure is another area that pictures the economic impact of the poultry sector. The investment in incubation facilities is estimated at $10,000,000. Another important investment of $30,000,000 has been allocated to animal feed mills. The big difference with Brazil and Argentina is that none of the international animal feed millers

have branches in Uruguay. Because of that the biggest Uruguayan broiler companies have to make their own rations (Errea & Llundian, 2007).

Holding about 900,000 sq. meters of covered buildings, the Uruguayan poultry sector has by far the largest investment in constructions than any other agricultural sector. At the moment all poultry houses are heated using firewood. This implies a demand of 265,000 tonnes of wood per year. With reference to slaughterhouses, processing of by-products, and cold-storage rooms, it is estimated a total investment of over $26,000,000. The vehicles involved in the activity make up another $21,000,000. It is estimated an investment of $10,000,000 in local shops and $3,000,000 in administrative buildings. Another important asset is the working capital, which is integrated by reproductive lines, storage of some inputs, and stocks of firewood. All these items are valued at $27,000,000 (Ruiz et al., 2003a).

Taking into account the above mentioned figures, there is no doubt about the importance of this sector to the Uruguayan economy. It has to be taken into account that the economy of Uruguay relies on its farming production (DIEA, 2006).

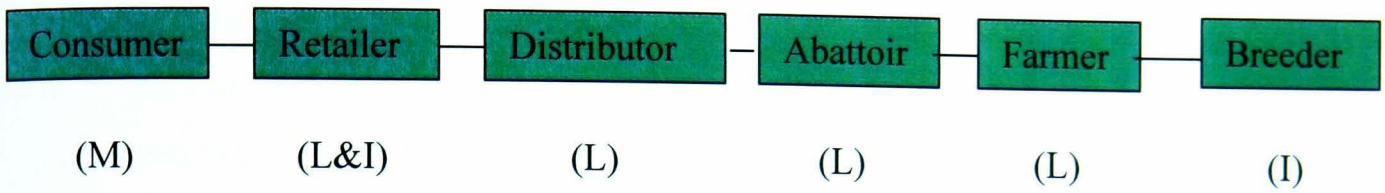
The Structure and Organization of the Uruguayan broiler industry

This activity has the characteristic of generating small utilities per chicken but it becomes attractive when the industry is processing 27,000,000 birds as in 2005 (Ministry of Agriculture, 2006). The poultry businesses depends on many links within the food sector, therefore, the efficient management of each one will increase the profitability of each business, which will enable them to invest in specific areas identified as vital for the future of the company.

The Uruguayan chicken industry has a high level of vertical integration. More than 80% of the production is done in this format. The biggest poultry companies of Uruguay have undertaken all of the value activities from the production through to the delivery to the final consumer (Enrich et al., 2004).

The Uruguayan chicken industry chain can be represented as follow:

Figure 9: Uruguayan Chicken Chain



(M): Mainly local

(L&I): Local and International

(L): Local

(I): International

In Uruguay the supermarkets have yet to wield the same power that they do in developed economies but this is clearly starting to happen. This means that the production sector of the industry must anticipate and react quickly to the changes in the market, it is no longer sufficient to wait for the information to be passed down from the retailers. It is possible to see how this concept has influenced meat consumption. The Uruguayan chicken industry was able to adapt their products to the new life style trends whilst the pig industry was stuck with their old products. As a consequence of this, the consumption of poultry meat has shown a constant increase whilst pork consumption has stagnated (Uruguay XXI, 2005).

The Uruguayan broiler industry is integrated for four big players that dominate the market of broiler breeders, three small companies and two small illegal independent producers.

The names of the legal companies in order of importance are:

i. Calprica
ii. Casa Quinta (Pollos Tenent)
iii. Avicola del Oeste
iv. Avicola San Bautista
v. Avesur
vi. Avicola del Remanso
vii. Avicola Frontini (Avicola Melilla)

The structure of the production has a high level of concentration where four companies account for the 75% of the total production. According to the available data on slaughtered chickens, the four biggest companies were responsible for the slaughtering of 80% of all birds in 2006 (Ministry of Agriculture, 2007). The enlargement of the biggest companies as a result of the acquisition of the smaller ones is a process that was accentuated over the last seven years (Errea & Llundain, 2007).

The technological level of the big companies is reasonably good but not as good as the Brazilian or Argentinian companies (La Camara de Industrias del Uruguay, 2006). The Uruguayan poultry production has been increasing at a sustainable rate, passing in the year 2006 the 63,000 tonnes. The decrease between 2002 and 2004 was a direct consequence of the financial crisis that started in Argentina and later spread to Uruguay (Chamber of Commerce and Exports of Agricultural Products and Agro Industrial Products, 2006).

Table 20: Uruguayan Chicken Production, Exports and Consumption.

Year	Production (t)	Exports	*Per capita* consumption (kg)
2000	56,206	707	16.5
2001	54,998	843	16.1
2002	45,181	919	13.2
2003	30,686	7	9.1
2004	40,997	23	12.2
2005	51,762	201	15.6
2006	63,452	1,394	18.7

Source: Adapted from Errea and Llundain (2006).

Clandestine slaughter used to be relatively high, it was one of the factors preventing a major development of the sector. The illegal producers slaughtered birds on the black market, did not pay taxes, had no hygiene inspections, and because of these factors made extra profits. However, the current government has taken a lot of measures to tackle this situation as well as to discipline tax evaders within the poultry sector (La Camara de Industrias del Uruguay, 2007).

Uruguayan Broiler Meat Production

According to a director of the Ministry of Agriculture, a successful Uruguayan poultry company manages efficiently the following aspects of the production chain (Director, Ministry of Agriculture Uruguay, personal communication, April 25th, 2007):

Reproductive lines.

Uruguay acquires from foreign countries 100% of the genetic material utilised at parent levels. At the moment the volume of production does not justify access to the following step (grandparents). The choice of the reproductive lines is done taking into account productivity criterions as well as consumer's demand. The birds or fertile eggs, depending on the case, come into Uruguay with health certificates that ensure minimal transfer of diseases. During the rearing and production the birds must be treated with special care and in isolation of other birds to ensure the quality of the baby chickens. In order to do that the birds are allocated to special farms, and handled by personnel that carry out strict health measures. These measures must ensure that wild birds will not be able to get access into these sheds.

The process of incubation.

The eggs from the reproductive lines are incubated to produce broiler breeders. The incubation is carried out in machines with a capacity for approximately 100,000 eggs each and after 21 days chicks are hatched and later classified. During the process of classification all the chickens that are considered not suitable for production will be slaughtered. The remaining baby chickens are sexed, separated accordingly, and vaccinated against different diseases. Some companies also cut the bird's beaks.

The fattening.

The Uruguayan companies only rear a small proportion of the birds. The majority of chickens are fattened by the so-called "faconeros" (the contract growers). The contract grower works for the company providing the buildings, the bedding (usually rice husks), the shed's heating and lighting, the equipment (to eat and drink), and the labour force. The integrator supplies the birds, the food, veterinary control, vaccination and eventual treatments that should be given to the poultry. The payment is done at the end of the rearing taking into account the following coefficient:

$$\text{Efficiency Factor} = \frac{\text{Viability} \times \text{Weight at slaughter time}}{\text{Conversion} \times \text{Days of life}} \times 100$$

The viability factor represents the percentage of live chickens that arrive to the abattoir taking the total number of chicks as the 100% value. The average weight is taken of the chickens that arrive at the abattoir before being slaughtered. The conversion is the result of dividing the total of kilos of consumed food over the kilos of produced chicken. The last factor considers the age at which the animals arrive to the abattoir. The multiplier of 100 is used on the output in order to have entire numbers. The use of this coefficient prevents the use of bad actions both with the birds or the food. The lack of birds would affect the viability and the final weight. If the ration was used to other purposes rather than feeding the birds, what would be affected are: the conversion, the average weight, and the age of slaughter. The use of the efficiency factor is a very practical and effective way to control the contract growers. The companies rear in their own buildings a small number of birds with the intention to forecast what the results of their contract growers should be. The amount of money received by the contract grower depends on the efficiency of the work.

Every second month the poultry companies publish a ranking of the performances obtained by contract growers. Those that are in the last places run the risk of not receiving any more chicks. Moreover, the poultry companies maintain informal contacts; therefore, contract growers with a bad reputation will find it very difficult to get agreements with other company within the chicken sector. The main advantage of this system to the integrator is that the company does not need to invest in the purchase of land, the building of chicken sheds and the installation of equipment to operate the farm. Another advantage is that with this system the company does not have to handle personnel dismissal with all the implications that it brings. From the Uruguayan chicken industry managers' point of view, this way of organisation allows the poultry companies to earn efficiency because they think that it is more convenient to delegate this link in the food chain (The Chamber of Industries of Uruguay 2006).

The contract grower also benefits from this system since he/she does not have to pay for the inputs such as birds or food that are supplied by the companies. Furthermore, the farmer does not need to be concerned with the variations in the sales price, the slaughter, or commercialisation of the birds. Summarising, the contract grower exchanges his/her

independence for a production free of risk in a business that is run in a changeable environment.

The slaughter.

The slaughter of the birds is an activity that needs to be carried out with all the demands of a product for human consumption. It also has to respect all the rules related to the care of the environment. The success of this stage is linked with economies of scale. Ideally, the abattoir should work daily because this is an activity that requires skill personnel making it very difficult to run with temporary employees. It is increasingly important that the way in which the carcasses are cut and presented, is correct, this means that more skill employees are required. The sale of carcasses has been increased by the introduction of pre-cooked products for barbecues (Ministry of Agriculture, 2007). This is quite important in a country such as Uruguay in which the barbecue is a traditional method of cooking. During the process of slaughter the by-products are separated for alternative destinations. How much of the by-products is used varies accordingly to the market studied. For instance, in Brazil the head and lower legs are eaten in contrast to the Uruguayan market.

Nutrition.

The Uruguayan big poultry companies have their own poultry feed mills. This differs with Brazil and Argentina where there are big international companies involved in feed milling and crops trade. In an industry in which the cost of the food accounts for the 65-70% of the total cost; it does not look sensible from the strategic point of view to depend on other Uruguayan competitors especially when the margin of the animal feed millers in Uruguay is over 8% (OPYPA, 2007). This situation could change if the big international animal feed millers would decide to target the Uruguayan market. In theory, they should be able to sell rations at a cheaper price as they have access to cheaper inputs and better know-how. The feed as it is shown in the following table is the main factor influencing the overall eating quality of chicken.

Table 21: Factors that Affect the Overall Quality of Chicken

Factor	Percentage of influence	Sector
Breed	2.5	Farm
Farm	7.5	Farm
Stress	10	Farm
Feed	40	Farm
Dry chilling & maturation	30	Factory
Soft scald	10	Factory
Total	100	

Source: Adapted from Ruiz et al., (2003a).

Another fact to consider when deciding to produce or purchase the ration is the sanitary issue. Chickens must be fed with a ration free of diseases such as the different types of salmonellas. Sanitary control plays an important role in the success of the operation; therefore it is a strategic decision to ensure the traceability of the ration (Ministerio de Salud Publica, 2004). The biggest animal feed miller companies in Uruguay have excess capacity and therefore, they use part of their capacity to produce rations for other species with the purpose to increase their economic efficiency.

Commercialisation.

The majority of chicken meat is traded as fresh refrigerated meat. This is a consequence of Uruguayan consumer's preference for this kind of presentation. Trade of the refrigerated form of the product is limited as it can only travel 1,000 km under the current transportation system (Chamber of Commerce and Exports of Agricultural Products and agro Industrial Products, 2006).

In the case of high volume customers such as supermarkets, public institutions, schools, restaurants, and hospitals, the larger companies supply the product through their own channels. Smaller companies tend to trade with small volume customers. Some of the larger companies also target the public through direct sales in their own shops. The most recent way is to target the consumers in setting up shops with a design very similar to the most popular chain of fast food restaurants. In these shops the companies sell a wide range of chicken products that can be eaten in the shop or taken away. The strategy also targets

children with decorations and activities thought to be a source of attraction to them (Ruiz et al., 2003b).

Exports have never been relevant for the Uruguayan poultry businesses. It is quite difficult for the Uruguayan industry to get access into the world markets because of the subsidies applied by some countries and the uncompetitive Uruguayan cost of production. The imports of chicken are insignificant because of the sanitary barrier.

Types of Chickens Reared in MERCOSUR and Trade Policies Restricting the Chicken Trade between Members of the Union

The main differences between the Uruguayan chicken and the rest of MERCOSUR countries can be found in the size and presentation of the birds. The Brazilian consumer prefers a frozen bird with a weight quite inferior to the bird consumed in Uruguay. The colour of the bird is not a relevant characteristic for Brazilian consumers, however, for Uruguayan consumers it is an important feature that they associate with the health of the bird (the skin must be yellow). The Argentinian consumer prefers a larger chicken than the Brazilian does but it is still lighter than the Uruguayan birds (The Chamber of Industries of Uruguay, 2006). These facts do not mean that Uruguayan's companies are protected against foreign competition. The size of the bird that Uruguayan consumers look for can be easily reared with few changes in the management and nutrition of the birds.

The main factor explaining the difference in chicken prices between Uruguay and its MERCOSUR neighbours is the barrier to entry. The Uruguayan broiler industry is isolated from the rest of the market due to a sanitary barrier. This measure prevents other countries from exporting chicken if they have Newcastle disease or if their meat has not had a treatment that ensures the destruction of the virus. These technologies imply thermal treatments so as a result there is no possibility to export the treated chicken in the form of carcasses, fresh chicken, cooled or frozen that are the most common means of consuming chicken in the Uruguayan market. There is a small possibility for the import of pre-cooked foods that have been treated with thermal treatment; however, these are consumed by a small sector of the population (Perez, 2002).

The sanitation restriction is taken by Uruguayan neighbours to be a non-tariff barrier that does not fit in with MERCOSUR agreements or the World Trade Organisation mission

(Comision Sectorial Para el MERCOSUR, 1998). This sanitary policy reflects the fact that there is no Newcastle disease in Uruguay. It is clear that the poultry sector has benefited because of this measure, it has permitted the consolidation of a sector that has not achieved the competence of other markets. Uruguayan companies have been fixing their prices with utility margins higher than the rest of the MERCOSUR countries (Chamber of Commerce and Exports of Agricultural Products and Agro Industrial Products, 2006).

Uruguay is recognised as a country free of Newcastle disease by the International Organisation of Epizootic (IOE), nevertheless, this status has not been recognised by the US. The lack of adequate regulations and strong systematic control measures cannot assure objectively the disease-free situation of the Uruguayan broiler industry. The actual disease-free condition has been confirmed only through blood testing of random samples and the absence of outbreaks. Argentina is trying to be recognised as free of Newcastle disease and Brazil considers that some areas of its country are free of Newcastle disease and as a result is requesting the regionalization of the country (Instituto Nacional de Tecnologia Agropecuaria, 1999).

A few months ago the Uruguayan Government banned vaccination against Newcastle disease with live virus; this was in order to stay one step ahead of the MERCOSUR neighbours. Also the Ministry of Agriculture, with poultry company's agents, is at present working to produce a regulation that will ban the import of products treated with live vaccines against Newcastle disease. This means that officially there is going to be no live virus within Uruguay. This establishes a valid argument, in the face of OMC, to stop imports into the country which may pose a risk of disease (Ministry of Agriculture, 2007).

Internal and External Relevant Factors

From the point of view of an economic group that is interested in considering the Uruguayan chicken industry as an option of investment, the following information should be considered:

i. The industry is in a stage of growing and the number of chicks has increased more than 10% per year over the last 5 years.
ii. The increase in chicken meat consumption in Uruguayan may follow to some extent the increase of the Argentinian market. Considering that both countries have

similar characteristics in social, economic and cultural aspects; the author believes that it would be feasible to reach similar levels of consumption. In 2006, the average Argentinian consumed about 28.2 Kg of chicken while the average Uruguayan consumed 18.7 Kg (Errea Llundain, 2007).

iii. After few years of economic crisis Uruguay reached stability in 2004. This particular good moment of the Uruguayan economy is partly the consequence of the high prices of commodities that have boosted the economy of the whole region.

iv. In respect to the technology used for the efficient production of poultry, in the short term there are not likely to be changes that could affect the panorama.

v. At the moment Uruguay has its boundaries closed to the entry of poultry products that have not received thermal treatment when they come from countries that suffered Newcastle disease. This determines that neither carcasses of chickens nor eggs can enter the market. The main market is for cooled products in the forms of entire chicken or in pieces. There are not a wide variety of pre-cooked dishes in Uruguay as is it common to see in developed countries. These products account for a small part (5% to 6%) of the total demand.

vi. If the industry does not force a change in the actual regulations it will lose the advantage offered by the protection. Argentina has declared itself free of Newcastle disease and meanwhile Brazil is putting pressure for a regionalization that permits its South East States (Santa Catarina, Rio Grande do Sul and Parana) to be recognised as free of Newcastle disease. If this situation happens trade would be free among the three countries that argue they have the same sanitary conditions. This would lead to a level price of chicken between these three countries and a decrease of the Uruguayan poultry profitability. This would move the chicken industry to a new equilibrium with narrow margins in Uruguay (Director, Ministry of Agriculture Uruguay, personal communication, April 25th, 2007).

vii. Uruguayan broiler companies have not had an export orientation. This has been a consequence of the domestic market offering better prices and fewer complications than foreign markets. When Uruguay has been present in international markets, it was only on particular occasions when the industry received refunds for its activities (La Camara de Industrias del Uruguay, 2006).

viii. It should be considered that Uruguay possesses a privileged situation related to poultry diseases. With the adequate legislation the country could take advantage of its sanitation status to export to markets demanding high quality chicken meat

(Chamber of Commerce and Exports of Agricultural Products and Agro Industrial Products, 2006).

Summary

The available data indicates few changes among poultry leading producers and exporters. Of particular interest for this study is the evolution of the Brazilian poultry industry that has become the world's leading exporter and could be one of the potential competitors to the Uruguayan broiler industry. Brazil is the main producer of the MERCOSUR and its international success is based on its cheap labour force, high competitiveness, international experience, and high technology. The other potential competitor to the Uruguayan broiler industry comes from Argentina, a country with the world cheapest cost of maize production. Maize is one of the important components of poultry feed ration which is the main cost of chicken production.

The information within this section has shown the relevance that the Uruguayan broiler industry has for the Uruguayan economy. The available data indicates that the Uruguayan poultry sector is giving employment to the 26.2% of all labour force that works in the Uruguayan agro industry. In Uruguay the development of the poultry industry is strongly associated with chicken price. The Uruguayan broiler industry has benefited from some government measures aimed to boost beef exports. It also capitalized on those Uruguayan consumers looking for healthier meats. The view of the people involved in the Uruguayan poultry sector is that there is still a big potential to increase poultry consumption.

The Uruguayan broiler industry has a high level of concentration and the biggest companies supply the largest centres of consumption of the country. The poultry industry is one of the few examples of a successful agriculture industry in Uruguay, however, this industry has enjoyed the comfort of a protective environment as competitive producers from Brazil and Argentina cannot access the Uruguayan market due to a sanitary barrier. This barrier is likely to fall and therefore, changes are imperative to improve the competitiveness of domestic poultry companies. Moreover, as multinational supermarkets have started to invest in Uruguay, they may purchase chicken products from the cheapest source either from Argentina or Brazil. The empirical section of the thesis now follows, beginning in chapter 7 with a discussion of research methods and the selection of the most appropriate one to address the objectives of this thesis.

Chapter 7

Methodology, Methods and Approaches

Introduction

Chapter two concluded that Porter's (1990) 'diamond' model provided the most appropriate conceptual framework to analyse the competitiveness of the Uruguayan broiler industry. This chapter presents a range of alternative methodologies to carry out the research project, and the rationale behind the selection of the most appropriate option to achieve the key research objectives described in chapter one.

The chapter starts with a brief review of research philosophical positions, research methodology, and research strategy. While reviewing philosophical positions and research approaches, the chapter provides a justification for, and details of, the methodological process by which qualitative data was collected in order to meet the objectives outlined above. It continues with a critical review of data collection methods with particular emphasis on interviews. Then cultural aspects, sampling methods, secondary data, and methods of analysis are discussed within the context of this study. The end of the chapter presents the limitations of the research.

It is important to highlight that while social science research follows the same basic process as pure scientific research it differs in that social science research is concerned with subjective human values. As social science research started later than natural science research, the theoretical foundations are less secure. The exact replication of tests of a theory is unrealistic in social science. Therefore, it is very difficult for a social scientist to predict outcomes with the same accuracy as the pure scientist. Another complexity of social research is that human beings under study may try to please the researcher, may show off or sabotage the study, they may refuse to take part of the study, and so on, and these human factors may alter the conclusions of the research (Mellenbergh, Baird, Berger, Cornell, Hagenaars & Molenaar, 2003). This particular study has shown that key actors from the targeted industry have, in some occasions, different points of view. For this reason, it was decided to interview people not only from the broiler industry but also from government organizations detailed below.

Business research, which is a subset of general research, has been defined as "*the systematic and objective process of gathering, recording and analysing data for aiding making business decisions*" (Zikmund, 1994, p.7). Research also means to search again, which implies that part of the process is to review problems/theories from different perspectives. In this sense, this study presents a new way to look at a well developed theory and also suggests policy recommendations to address the problems that a Uruguayan agribusiness sector may face in the short term.

Research Philosophy

The development of knowledge in social science can be conducted through four different types of research methodology. These four methods of research are called realism, positivism, post-positivism, and pragmatism. The selection of a research method is influenced by the personal preferences of the researcher, the objectives of the research, and the type of study.

Realism aims to explain why things behave in a certain way. In so doing, the methodology seeks to establish the motivations and actions that lead to patterns of behaviour. This philosophy argues that a reality exists and it is independent of human thoughts and beliefs. It stresses the importance of understanding people's socially constructed interpretations and meanings and the nature of people's views and behaviour. Supporters of realism argue that without human interaction in the process, an inquiry into the social world becomes too abstract to understand. They believe that the researcher must be closely connected to the research subjects to explore their perception of reality (Sobh & Perry, 2006).

Relativists reject the quantitative approach because they maintain that human beings' ideas are subjective and very individually-based. They argue that because of the dynamics and difficulties of social research, understanding is difficult to achieve using a quantitative approach (Sobh & Perry, 2006). Typical methods used in intensive research are case studies, interactive interviews, and ethnography. The data is generally analysed using a qualitative technique. The main disadvantage of realism is its lack of representativeness (Hammersley, 1992; Neuman, 2006).

Positivism was developed by August Comte during the nineteenth-century. The main objective of positivism is to explain processes. In order to do that it advocates the

discovery of universal laws governing the behaviour of processes. The positivist paradigm bases knowledge solely on observable facts. Supporters of this methodology maintain that the human world can be studied in the same way as the natural world, thus producing knowledge that is comparable to the natural science (Travers, 2001). They interpret the world as an objective and logical system containing subsystems. Positivists claim that reality is "real" and "apprehendable" (Lincoln & Guba, 2000).

Positivism suits those researchers who prefer to work with an observable social reality and the final conclusion to be law-like generalizations. Positivists opt for an inductive or hypothetic-deductive procedure to establish and explain patterns of behaviour. They are interested in findings that are generalizable to the whole population. Typical methods used in extensive research are large scale surveys of a population or representative sample, formal questionnaires, and standardized interviews. The data are generally analysed using mathematical models and statistical techniques (Creswell, 2003). Data reduction and determination are therefore two common features of positivist research. These techniques provide an 'objective, value-free', interpretation of reality. The results of research using positivism are then said to produce a set of true and precise laws of human behaviour. The main disadvantage of extensive research is its lack of explanatory power because the relations that it discovers are formal ones of similarity, dissimilarity, and correlation, rather than substantial causal relations of connection (Nodoushani, 2000).

As discussed above positivists support quantification for data reduction. This approach may not be suitable to research some themes in social science, such as competitiveness, when subjective perception is involved. In social science it is relevant to address the dynamic elements of individuals and contexts and therefore it is not clear whether these subjects should be treated in the same way as the objects in the natural world. Some authors have pointed out that social science research and natural science research should be conducted with different research methods. They argue that while the natural world cannot be controlled or manipulated, the ideas of individuals are changeable (Pather & Remenyi, 2005). This suggests that a fully statistical method might be inappropriate to research the social world. In spite of this, a few scholars have pointed to the value of mathematics when employed to explain some social phenomena. However, this methodology could be limited to study complex situations and when in-depth understanding of respondents is required for gaining insight (Creswell, 2003).

Critics of the principles of positivism gave rise to the post-positivist research philosophy. This new current was developed during the 1960s and aimed to address some of the flaws of positivism. Supporters of post-positivism argue that in spite of being a real world waiting to be discovered, there are many perceptions of it. These perceptions are not reality but windows to obtain a better picture of that one reality. According to post-positivists the methodologies used to perceive the real world can be both qualitative and quantitative techniques. However, when choices are between qualitative or quantitative methodology, post-positivists prefer the experimental design due to their concern with casualty and internal validity (Tashakkori & Teddlie, 1998).

Philosophical pragmatism argues that ideas and practices should be analysed in terms of their usefulness, workability, and practicality and that these are the criteria of their truth. It suggests a plurality of changing truths rooted in concrete experiences, in which a truth is appraised in terms of its usefulness. The ontological foundation of pragmatism challenges the idea that there is an underlying objective reality, as it asserts that all inquiry is shaped by factors such as language, culture and history. Reality is thus equivocal and pragmatists deny that absolute certainty exists. Instead, pragmatists believe that there can be multiple interpretations of events and that different concepts can be used to describe the same phenomena. The theory argues that the use of mixed philosophies is very practical in conducting research (Tashakkori & Teddlie, 1998).

All methodological techniques have their pros and cons but the key is to identify the most suitable methodology to address the objectives of the topic under study. The literature indicates that it is very difficult for a researcher to make inferences about the nature of interactions between the factors and variables using positivist research. Some authors argue that statistical patterns or correlations are not understandable on their own and that it is necessary to look at the real motives that lead people to behave in a certain way (Blaikie, 2000). As this study deals with a complex social science phenomenon the positivist approach is not appropriate for this research.

This research aimed to understand the motivations and actions that have lead key decision makers to certain patterns of behaviour. It was also relevant to unveil how the people involved in the Uruguayan broiler industry understand competitiveness and strategy within the context of a more integrated MERCOSUR. Because ideas are subjective and very

individually based the positivist approach was not the best option to address the questions of this research. Therefore, this study opted for a realism approach because of its explanatory power and adequacy to reveal the underlying causes of competitiveness within the Uruguayan broiler industry. This methodology would also allow testing and analysing Porter's (1990) model in a developing country such as Uruguay. The combination of qualitative and quantitative techniques suggested by the post-positivism and pragmatist philosophies was rejected for the reasons given below.

Research Methodology Approach

This section discusses the most relevant research approaches and selects the most appropriate one to test Porter's (1990) theory.

Deductive

Deductive research follows a conscious direction from a general law to a specific case (Andreewsky & Bourcier, 2000). A research approach is deductive when the design of the research strategy is to test a developed theory and hypothesis (Taylor, Fisher & Dufresne, 2002). Supporters of this approach maintain that research must always start with a body of prior theory. The deductive approach is used in scientific and social research and requires independency between the researcher and what it is being observed. One of the advantages of this approach is that there is clarity about the topic of investigation and consequently information can be collected speedily and efficiently. The drawback of the deductive approach is that the final findings could be insignificant, and the results inconclusive or negative (Easterby-Smith, Thorpe & Lowe, 2002).

Inductive

The inductive approach starts with data collection and then examines it to see what theory is suggested by the results of the data analysis. The theory arises from the data by a process of induction. Contrary to the deductive research, the inductive research develops from a specific case to general law (Danermark, 2004). It is an appropriate methodology when the project is concerned with the context of events. Some authors have termed this approach as theory building because the researcher begins with observations and use inductive reasoning to derive a theory from these observations (de Vaus, 2002). When there is limited literature in relation to the topic under study it may be advisable to adopt an inductive approach that allows theory building (Bridges, 2007).

Retroductive

The retroductive approach is a methodology associated with the philosophical approach of scientific realism. It is similar to the deductive approach in the sense that it starts with observed regularity. However, it differs in the way data is interpreted and analysed. In retroductive research the explanation of phenomena is achieved by identifying the real underlying structure or mechanism that is responsible for producing the observed regularity. Retroduction makes use of imagination and analogy to work back from data to an explanation (Blaikie, 2000).

Abduction

This approach has been used explicitly by very few authors. Proponents of the abductive approach argue that most great advances in science neither followed the pattern of pure deduction nor of pure induction (Taylor et al., 2002). They claim that in order to overcome the limitations of deduction and induction, creativity and intuition are necessary. Abductive reasoning stems from an unexpected observation that requires an explanation that cannot be reached using established theory. The research process of the abduction follows this path: from rule to result to case. Instead of focusing on generalizations, this approach aims to explain which aspects of a situation are generalizable and which others are concerned with a specific situation. This approach is suitable to understand something in a new way, from the perspective of a new conceptual framework. While the previous three approaches can be applied to either natural or social sciences, the abduction approach is particular to the social sciences (Blaikie, 2000).

The present study needed to select the best research approach to test an existing framework (Porter's diamond). The literature on research methodology approach suggests that the deductive approach is the most suitable research methodology for testing existing theories (Arlbjorn & Halldorsson, 2002; Yin, 2003). This methodology aims to test theories by identifying variables and gaining data which will support or refute the theory. Using such a deductive approach, this study will critically review Porter's theory literature, test it, and present the conclusions in the last chapter. In order to 'test' Porter's diamond, the variables were predetermined. Part of the data was collected to test these variables and their relationships. It has to be noted that Porter's diamond factors were developed from a variety of case studies belonging to industries in developed countries. There is not a study that has tested the validity of this model in a developing country in South America.

Research Strategies

The research strategy is concerned with the general approach adopted in a project. It is the overall plan to meet the research questions. A research strategy is a "blueprint" of research, dealing with: what questions to study, what data is relevant, what data to collect, what data collection methods should be used, what measurement and scaling procedures are suitable and how to analyse the results (Yin, 2003).

Surveys.

Surveys are the most common source of primary data collection in the social sciences in general. Because the method is so popular, many researchers use the survey technique even when alternative methods are more appropriate. The use of surveys allows the gathering of large quantity of data from a considerable population in a cost-effective way. Once the data has been collected it is standardized in order to permit comparisons. One of the greatest advantages of survey research is that it can be used for gathering both qualitative and quantitative data. Questionnaires, structured observation, and structured interviews are the most common data collection methods used in surveys. The main way of collecting information is by asking people structured and predefined questions. In general, the survey strategy is associated with the deductive approach (de Vaus, 2002).

Because of the aims of the research and the characteristics of the Uruguayan broiler industry the survey seems to be an inappropriate method. First of all, this study wanted to give interviewees the opportunity to freely express their ideas in relation to certain topics. The researcher also wanted to interact with interviewees in order to fully understand the decision making process of the industry key actors. This would have been very difficult to achieve using surveys which may constraint interviewees' answers and eliminate the interaction between the interviewer and the interviewee.

Grounded theory.

The grounded theory allows the researcher to collect data without having an initial theoretical framework. From the analysis of the collected data a theory is developed and tested in further observations. This strategy has shown its adequacy when the researcher adopts an inductive approach. Grounded theory clarifies the areas to be investigated and facilitates the collection of information (Strauss & Corbin, 1990). Clearly, the grounded

theory is not adequate for a study which has among its objectives to test the validity of a theoretical framework developed by others.

Case studies.

Case studies are appropriate for research which involves an empirical investigation of a contemporary phenomenon within its real life context (Robson, 2002). The researcher has no control over the phenomenon, but can control the scope and time of the examination. The case study is a popular strategy when the research aims to answer how and why, the research does not require control of the behavioural events, and the research is about contemporary events. Case studies have been identified as a very good strategy to investigate and test existing theories as well as being a source of new hypotheses. They are a very good tool to capture the complexities of corporate strategy, competition, and those uncontrollable environmental factors surrounding strategy formulation. Questionnaires, interviews, observation, and documentary analysis can be used as data collection methods. Although previously considered an inferior method of inquiry limited by lack of quantification, today case studies are accepted as a valid form of inquiry in the context of descriptive as well as evaluative and casual studies (Denzin & Lincoln, 1998).

Within a deductive approach, this research opted for an industry-level case study research strategy because it appears to be the best option to test Porter's (1990) theory, as well as to collect the required data for elaborating policy recommendations for the Uruguayan broiler industry. The purpose of using this research strategy was to examine in detail those factors that are responsible for competitiveness as well as understanding the rationale behind the process of competitiveness in individual firms within the Uruguayan broiler industry. The case study approach is recommended to analyse contemporary events. This particularity make the case study the perfect research strategy as one of the aims of the research is to analyse the competitiveness of the Uruguayan broiler industry within the scenario of a MERCOSUR operating without trade barriers. The development of MERCOSUR is evolving and the last sanitary and non sanitary barriers that have protected some industries such as poultry in Uruguay are likely to disappear in the short term. The chosen strategy offered the ability to research into a topic that has not been analyzed in Uruguay.

Data Collection Methods

There are different methods for data collection ranging from a simple observation at one location to a worldwide survey. The selection of the method will affect how the data is collected. Primary data can be recorded using questionnaires, observational forms, standardized tests, interviews, mute data (photos and artifacts), and laboratory notes (Cooper & Schindler, 2006). Research does not have to involve primary data collection; it can also involve existing sources made available by others (Sapsford & Jupp, 2006).

The most commonly used instruments for collecting primary data are postal questionnaires and interviews (Clover & Balsley, 1974). Quantitative methods such as postal questionnaires assume a particular view of the social world as something that can be objectively measured. In fact, the use of postal questionnaires as a tool of collection has its origins in the positivistic tradition where the concern is for measurement and standardisation. Supporters of this instrument try to simplify a complex social world by collecting data from which generalizations about human behaviour are made (Creswell, 2003). On the other hand, interviews aim to understand people rather than measure them and to interpret human meaning and action in context. Whilst postal questionnaire researchers claim that data is reliable and representative, interview researchers claim that collected data is valid because it tends to be of a more in-depth and thorough nature which takes into account the world-views of others (Creswell, 2003). There are advantages and disadvantages of each instrument.

The advantages of using postal questionnaires as data collecting instrument are:

i. it gives the interviewee a considerable amount of time before responding,
ii. it permits anonymity,
iii. it can be forward to many people simultaneously,
iv. it is less expensive than interviews and eliminates the bias introduced by the interviewer,
v. it provides a great uniformity as each person replies to the same questions,
vi. the analysis of the data is generally more easy to analyse than the data from oral responses,
vii. it can be emailed or administered directly to a group of people (Isaac & Michael. 1990).

Proponents of the postal questionnaire as a data collection instrument argue that it is an efficient and practical tool, which allows for the use of a large sample. On the other hand, there are some disadvantages associated to the use of postal questionnaires such as misinterpretation of the questions, unsuitability for subjects with poor literacy or poor vision, lack of opportunity to clarify questions or explore certain aspects of answers, the researcher generally does not know if the questionnaire was filled in by the respondent it was meant for or if the respondent has consulted other sources, there is little flexibility for respondents to present their own views, and low response rates (Isaac & Michael, 1990).

There are conceptual and practical reasons to eliminate the postal questionnaire as a data collection method in this research. First of all, this study aims to understand people views and actions rather than measure them. Secondly, it is very unlikely that a Uruguayan broiler entrepreneur would reply to a postal questionnaire. Most Uruguayan owner-directors were originally broiler farmers. Broiler farmers in Uruguay receive a very modest income. However, the owners of the Uruguayan broiler companies had the ability to integrate their businesses vertically and horizontally becoming successful entrepreneurs. This has allowed them to change their social class and now they are among the few that enjoy the benefits of belonging to upper class in a country of huge social inequalities. They have power, they enjoy using it, and they feel they are very important people. Because of this reasons it would be extremely unlikely for one of the owner-directors of Uruguayan broiler firms to reply to a postal questionnaire.

The interview as an instrument for data collection has also many advantages. An interview facilitates the gathering of in-depth and detailed information. It gives the opportunity to clarify the questions, and it is more appropriate than the questionnaire for obtaining data that requires sequencing, or from people who cannot read. However, there are some disadvantages associated with the use of interviews such as the expense, the time consuming nature, and the influential role that the interviewer may have on the interviewee (Silverman, 2004).

There are some aspects that should be considered in deciding which instrument use for the research. According to Berdie and Anderson (1974) these factors are:

i. geographical spread of the cases,

ii. time constraints,
iii. number of cases to be surveyed,
iv. financial limitations,
v. efficiency of communication and transportation systems, and
vi. cultural attitudes toward each of the approaches.

This study has opted for a qualitative approach. Qualitative data are collected in the form of spoken or written language rather than in the form of numbers. The main sources of qualitative data are: interviews, observations, and documents. Interviews have proved to be a very good approach to gain a detailed account from an informant of the experience under study (Potter, 1996). Interviews seem to be the best option for this study as they would allow unveiling reasons of competitiveness, to interact with key actors, and to access to the required data to fulfil the objectives enumerated above. The next section will discuss the most appropriate type of interview for data collection.

Interviews

The most common types of interviews used as research instruments are: structured interviews, semi structured interviews, and unstructured interviews.

Structured interviews are used to gather data in a highly formalized way using questionnaires based on an identical set of questions. Interviewers must read the questions exactly as they appear on the questionnaire. Usually the choice of answers to the questions is fixed (close ended); however, open-ended questions can be included. In order to avoid any kind of bias the interviewer is requested to conduct all the interviews using the same tone of voice. This type of interview is commonly employed in survey research (Silverman 2004).

Semi structured interviews can be defined as guided conversations where wide ranging questions are asked (Wengraf, 2001). Within a semi structured interview new questions are likely to arise as a result of the discussion. These interviews are relatively informal, relaxed discussions based around a theme that was determined in advance. Generally the interviewer would explain the context of the study and its main objectives to the respondents. When using this type of interviews the researcher allows the respondents to express opinions through discussion. The researcher must ensure that the questions are

clear to the respondents and that they are in a logical sequence to ensure the flow of the discussion (Silverman, 2004).

Unstructured interviews are used when there is a need for exploring in depth general areas of high relevance for the project. These types of interviews give the interviewee the chance to express himself freely about the topic under study. The main objective of this kind of interviews is to comprehend the meaning attached to issues and situations without the previous structure given by the interviewer in structured interviews. There is no need for the researcher to adhere to a standard list of questions. When these interviews are conducted the fieldworker is free to select the topics of discussion in any order. This type of interview is usually selected to collect data from a small-sized sample where the respondents are known for having a particular experience on which they can elaborate (Nichols, 1991).

Social research is concerned with building and testing explanatory models/theories of the realities with which the researcher is concerned (Wengraf, 2001). In general, different types of interviews are used for model-building or model-testing. Depending on the objectives of the research, the interviewer may shift between model-building or model-testing activity.

A loosely structured interview conducted with industry experts allows generation of maximum insights (Cooper & Schindler, 2006). This would not be possible through a highly structured questionnaire that is more suitable for studies where the subject of the research can be measured in a quantitative manner. Choosing a highly structured questionnaire would have implied to sacrifice richness of description for precision. For this study the quality of the data was a key issue and therefore a semi structured interview seems to be more appropriate than the rigid framework imposed by the structure interview.

Therefore, in this study the semi structured interview will be the major data collection instrument. This method was selected because of its suitability to provide insights into and an understanding of the subject under study. Face to face interviews were considered the most appropriate method, as they allowed understanding of individual key actor's activities, opinions, attitudes, aspirations and strategies. In depth interviews allow collecting the data needed to help to identify those factors that are responsible for the

competitiveness of the Uruguayan broiler industry and to test Porter's (1990) theory within the selected environment.

Other advantages associated with the use of semi-structured interviews as data collection method are that they would allow sufficient flexibility, enable clarification, and discussion in order to reach the levels of understanding required to fulfil the objectives enumerated above. A series of direct semi-structured questions were administered by personal interview with six key-decision makers (owner-managers) and six professionals (technicians and middle and junior managers) of each participating firm. 'Technicians' in this study will be referring to professionals with a University degree. In the six examined firms, all of the professionals were either agronomist or veterinaries who perform production, pathology, health, nutrition, and in some cases managerial activities. These interviews were supplemented with another eight interviews conducted with government employees to improve the validity content of qualitative data. All interviewees had experience within the poultry industry and they have been working in the same area for at least five years.

Key-decision makers were targeted by the study because they are the individuals who better understand the rationale behind the management decisions of the firms. Moreover, they are usually involved with the operational dynamics and external pressures that the firm faces. According to some authors, top management may not know most about what is going on in the firm, middle management is likely to be more aware, and junior managers may be most knowledgeable about particular matters (Macdonald & Hellgren, 1999). For the Uruguayan broiler sector this would not be an issue because all companies are run as a family business with one person (senior manager or owner-manager) taking almost all relevant decisions of the firm. However, in order to get the most useful results from the research middle and junior managers (professionals) were also interviewed. By doing this the researcher avoided obtaining a limited perspective.

The questionnaire was developed in advance. The structure of the questionnaire considered the researcher's concerns and Porter's (1990) theoretical framework. A semi-structured approach allowed expansion upon any interesting information that became apparent during the course of the interview even if it was not covered by the initial interview structure plan.

In this research, the questionnaire was seen as a guide of important points to be covered rather than a rigid framework to be followed blindly.

Interviews with managers, professionals or chief executives of the companies and government employees were conducted in March/April 2007. All interviewees were contacted by telephone in order to request their participation, to explain the purpose of the study, and to arrange a suitable time to conduct the interview. The researcher can rely on memory to capture the discussion that happened during the interviews. However, empirical research suggests that the human memory is an unreliable research instrument which is prone to bias and error (Denscombe, 1998). Therefore, all interviews were recorded on a digital tape recorder in order to ensure that all responses were accurately reported. All the respondents agreed with the interview being recorded. Care was exercised and the recorder was checked prior to every interview to make sure that it functioned effectively. In order to give the interviewee the chance to relax and talk about non-threatening topics, broad questions were used first. In this research, the interview sessions began with the researcher introducing himself and further explaining the reasons and purposes of the study. In general, interviews lasted between one hour and one hour and a half and involved travelling to various locations within the city of Montevideo and the province of Canelones to meet the key actors to be questioned. All interviewees were undertaken at the companies' headquarters/farms and government departments to ensure a comfortable environment for the interviewees. Most interviewees were very flexible about the length of the interview. However, because of the fierce competition within the Uruguayan broiler industry all interviewees requested to be anonymous. All interviewees were assured that their responses were anonymous and that the information they provided would be only used for academic purposes. Therefore, quotes from primary data presented in chapter 8 will not reveal the names of respondents. They are identified as PI (professional interviewee), OI (owner interviewee), and GI (government interviewee).

Observations of interviewees supplemented in-depth interviews. Observation as a data collection tool has proved to be an effective method that can be used at the beginning of a project (preliminary stages) or at the end of the project (Sapsford & Jupp, 2006). The researcher incorporated into the data all relevant nonverbal indications. In order to do that, observational notes were completed immediately after the interview to ensure that the best recall of the observations was achieved. Sometimes the interviewee carried on the

conversation after the digital recorder was switched off. In that cases notes proved to supply valuable information.

Although qualitative research interviews can be conducted in groups (focus groups), this study opted for personal in-depth interviews. The focus group approach was rejected because of the fierce competence within the domestic poultry industry. It would be very unlikely for respondents to openly discuss competitiveness issues and company's strategies in front of their peer competitors. Focus groups within companies were also rejected because, as discussed later, most decisions within the Uruguayan broiler companies are taken by one person limiting the numbers of suitable candidates to one or two. Moreover, it would not be sensible to do a focus group with the owner (key decision maker) and one of their managers as they would not be comfortable to discuss some issues, such as employee relations, that are important for the research.

Interview design.

The questionnaire design is important to ensure that the response information is that required to fulfil the objectives of the research. Empirical research suggests that the length and format of a questionnaire can influence the responses given by the interviewee (Robson, 2002). In this study, the questionnaire used during face to face interviews was designed for the purpose of collecting the relevant data needed to conduct this study. The design of the questionnaire aimed to develop a coherent, and focused document, rather than a set of random questions. The literature review has helped to develop the research questions to address the objectives of this study. A draft questionnaire was submitted for assessment on January 2007. The first supervisor of this project suggested some changes that were incorporated into the last version. The questionnaire was originally designed in English and then translated into Spanish by the researcher.

The structure of the interview plan is firmly rooted in the research objectives and there are two main components which explore these. The first component dealt with general issues related to the Uruguayan broiler sector while the second component dealt with issues related to Porter's (1990) model. The questionnaire starts with general questions and gradually moves to more specific questions. According to the literature this structure helps to prevent misleading interviewees (Robson, 2002).

Following the broad questions of the beginning of the interview session, interviewees were asked more specific questions to test all components of Porter's 'diamond' theory. When the researcher believed that more information was needed, he requested for elaboration and clarification. At the end of the interview session the researcher requested the interviewee to summarize the key aspects that have affected the competitiveness of the industry under study. This time of the session was also used to clarify any aspects that might have caused confusion. The researcher closed the session thanking the interviewee for his or her valuable cooperation and asked for their permit to be contacted in the future if there would be need for clarifications.

Owner-directors and professionals were asked thirty-six questions in total. Even though the same questions were asked to each interviewee, there was a degree of flexibility in terms of the order of the questions. Sometimes one question would trigger a respondent to express an opinion about a topic that was included in a later question. When that happened the researcher allowed the respondent to fully explain their concerns about the topic he was covering. By leaving the respondent to delve into an area that was not originally covered by the interview structure, the researcher picked up additional information that helped with the analysis of the research. Eight questions were orientated to elicit information about the history and market share of the company, the manager's professional experience in the context of the company, changes in the development of the business, and strategies to face the eventual competition from other MERCOSUR's members. The second part was designed to test all components of Porter's (1990) 'diamond' allocating six questions to factor conditions, four to demand conditions, six to firm strategy, four to related and supporting industries, four to government policy, and one to chance events. A copy of the interview plan is included in appendix 1 (English version) and appendix 2 (Spanish version).

Interviews with owner-directors were supplemented with interviews conducted with government employees to improve the validity of the research. The same questions were asked to government respondents to confront their answers with the views of owners and managers from Uruguayan broiler companies. Although government interviewees disagreed with few assertions of owner-directors and managers of broiler companies, the two groups disclosed more similarities than differences in their responses.

Cultural Context

Evidence from studies indicates that there are some important issues to be considered when using translation in qualitative research. It is suggested that at least to some extent there are some potential communication problems in all cross cultural research (Sechrest & Fay, 1972). The difficulty of managing data when no equivalent word exists in the target language and the influence of the grammatical style on the analysis are the most significant aspects affecting the validity and reliability of qualitative research (Twinn, 1997). These aspects need to be considered very carefully when the two languages involved have large differences in the grammatical structure as is the case between Chinese and English or between Urdu and English (Nelson McDermott & Palchanes, 1994).

There are no big dissimilarities between Spanish and English's grammatical structure compared to other languages. However, as the questionnaire for the interview was originally designed in English and contains some academic language, a few modifications needed to be done in the Spanish version to ensure that the interviewees would understand the meaning of the questions. Even though the questionnaire seems to be very easy to understand for a well-educated person it must be considered that most Uruguayan broiler businesses owners were originally farmers and have limited formal education.

For the above reasons, the researcher made the required modifications in the Spanish version to ensure the interviewees would understand the rationale behind each question and so that they would feel comfortable with the style and the language used during the interview. Every effort was taken to ensure that the Spanish version was equivalent in meaning to the original English version interview questionnaire. For example, if the researcher asked a Uruguayan broiler owner: 'What is the level of vertical integration of the industry?' there would have been a high chance that the interviewee might have not understood the meaning of the question. It would be more sensitive to formulate the question in a different way. A much better option would be to re-phrase the question in this way: "Could you please tell me the level of involvement of your business with the broiler food chain?"

Sampling and Selected Industry

Sampling methods allow knowing what a certain population thinks without contacting everyone in that population. The aim is to build a compartment of the population which is

representative in the area of interest of the research. There are two forms of sampling methods: probability and non-probability samples. In the first form every member has a known and equal chance of being included in the sample. On the other hand, in non-probability sampling methods the researcher selects members from the population without each member having a known chance of being included in the sample. The main drawback of probability samples is that they are costly and time-consuming. For non-probability samples the main weaknesses is lack of representativeness (Easterby-Smith et al., 2002).

In order to determine an appropriate sample size the following factors need to be considered:

i. the way the respondents are selected (random or convenient),
ii. the distribution of the population parameters (the variables of interest),
iii. the aim of the research, and
iv. data analytic procedures (Randall & Gibson, 1990, Wengraf, 2001).

In order to achieve the objectives of this research in an efficient way the companies could have been selected using a combination of particular interesting cases, homogeneous sampling, and typical cases. According to Ereaut (2002) the number of participants should be large enough to see patterns in responses. However, it must be taken into account that a too large sample would overwhelm the researcher compromising the final results of the project.

In order to get the most useful results from the study, the researcher tried to interview all legal companies within the broiler industry. This permitted collecting accurate data which represents the target population. There were no difficulties in identifying the contact details of Uruguayan legal broiler companies. It took more time to obtain the contact details of Uruguayan broiler owners. The researcher started interviewing one of the owner-director of Avicola del Oeste whom he had met from his professional career. The owner-director of Avicola del Oeste helped a lot to set interviews with the owners of the rest of the broiler companies. In Uruguay is easier to access to certain people if you are recommended by somebody they know and respect. Once the owners of the companies agreed to be interviewed, it was straightforward to identify and access those professionals involved in the decisions of the targeted companies (Agronomists or Veterinaries). However, one of

the firms (Avicola Frontini) refused to be interviewed on the basis of company policy rules. There are also two small illegal, independent producers who slaughter their birds on the black market, pay no taxes, and have no hygiene inspections. This study did not interview any of the illegal producers for two reasons. Firstly, the researcher did not have any access to any of the owners. Secondly, it is supposed that in the short term this unfair situation will disappear because the government is determined to abolish illegal producers. Moreover, illegal producers make up less than one percent of the market. This study supplemented companies' interviews by interviewing government employees. The difficulties to arrange these interviews are discussed below.

One of the main objectives of this research is to 'test' Porter's (1990) model of competitive advantage in a Uruguayan context. Because of the fact that Porter's (1990) 'diamond' was conceived around the dynamics of successful firms belonging to particular industries, the fieldwork also had to be structured in a similar manner. The Uruguayan broiler industry has been one of the few examples of an agribusiness sector in Uruguay that has gained competitiveness over the last three decades. Therefore, it was considered that the selection of this industry would yield the greatest benefit in exploring the rationale behind the success of Uruguayan broiler companies and in assessing how useful Porter's (1990) framework is in explaining competitive advantage within the selected industry. Moreover, the Uruguayan broiler industry has the right size to conduct research within the time limits imposed by a doctorate. It would have been unrealistic, for example, to try to conduct this study in all MERCOSUR countries.

Secondary Data

An important part of the research is not new information gathered by the researcher, but consists of a critical review of the work of others. Secondary data refers to information that has been previously collected for some purpose outside the planning process. Secondary data come from diverse sources such as company reports, the government, the industry, computerised databases, libraries, newspapers, census data, and marketing research sources. It is unusual for any research to be conducted that does not employ some type of secondary data. Secondary data can be used either during the exploratory stages of the research or at any of the stages of the research. This information could be valuable to help to address the questions of the research (Ereaut, 2002).

There are advantages and disadvantages of the use of secondary data. The main advantages of using secondary data are that they already exist, they save time, the reduced likelihood of bias, and the reduction of research costs. On the other hand, the main disadvantages associated with the use of secondary data sources are that the selection, quality, and methods of collection are not under the control of the researcher (Sorensen, Sabroe & Olsen, 1996).

Therefore, secondary data must be reviewed in order to determine the appropriateness, reliability, validity, and accuracy of it for the purpose of the study. If the data were collected by a reliable source and the evaluation is satisfactory, then the secondary data would be valuable to help to address the questions of the research or to provide a first evaluation of the topic under study which may set priorities for later in-depth studies (Rabianski, 2003).

In this study secondary data has played an important role. It has reinforced primary data to address the objectives of this research. Because of the nature of this industry study, the analysis and synthesis of MERCOSUR and environment forms became a core component of the research, as they have helped to set the context for the Uruguayan broiler industry.

The use of secondary data provided valuable information that contributed to achieving three of the objectives of the research namely: to identify the main strengths and weaknesses of the Uruguayan broiler industry; to evaluate the feasibility of Uruguayan broiler firms to compete with international firms (from Brazil and Argentina) in a regional market without barriers; and to produce policy recommendations that would help Uruguayan broiler firms to compete with international Argentinian and Brazilian firms in a regional market without barriers.

Specific sources of secondary data (government reports) were required to fulfil the objectives of this research. Other sources were: the Chamber of Industries of Uruguay, Chamber of Commerce and Exports of Agricultural Products and Agro industrial Products, plus the Ministry of Agriculture. The author utilized official sources to ensure that the data was accurate and came from a reliable source.

It has to be highlighted that in a developing country such as Uruguay there is hardly any published data related to the Uruguayan broiler industry. The lack of data is common for other agriculture industries such as wine or horticulture. There are however, published government statistics for beef and crops. This is the result of the government involvement with these two agriculture industries on which the economy of the country relies on.

Even though there is no available data for the Uruguayan broiler industry, there are some reports within the government and other institutions mentioned above. These reports are not available for public access and most people are not even aware of their existence. The researcher decided to contact these institutions and to identify those government employees who have access to broiler government reports or that have been involved in the elaboration and analysis of broiler reports. It was a challenging task to overcome the bureaucratic barriers in order to access to broiler reports and to those public employees that have been involved with the industry under study. However, the effort was rewarded with quality data that supplemented the collected data from the interviews with owner-directors and managers from Uruguayan broiler companies.

The secondary data obtained from government reports helped to elaborate chapter 6 (The tendencies and characteristics of the MERCOSUR broiler industry). When government employees had been involved in the production of broiler material, the researcher requested an interview with them. Again, a lot of effort and forms needed to be filled in order to obtain the authorization from the government organizations mentioned above. Quotes from these interviews are included in chapter 8 (Findings from qualitative interviews). They enhance the validity of collected primary data, by presenting the views of not only the people that work in broiler companies, but also those government employees that have been involved with the industry over the last few years.

Two of the key issues of this research were data availability and access to decision makers. In order to access to secondary data, the researcher contacted a professional from the Ministry of Agriculture. This person helped a lot in identifying which departments and government employees may have access to broiler reports. One thing was to identify those departments and another was to get access to the reports. As stated before, this involved much paperwork, and overcoming bureaucratic obstacles. Without the help of somebody from inside the industry it would have been very difficult to manage to interview the key

decision-makers from Uruguayan broiler companies; similarly, without effective support from the Ministry of Agriculture, other respondents would have been less forthcoming.

Analysis

One of the key questions when analysing data is to determine what is more important, the quality of the experience or the frequency of opinions and events. Business strategy needs sophisticated research methodologies because it covers a complex topic. Understanding firms' business strategies entails comprehension of their history and corporate strategy, their competitive environment, and their managers' background. Even though, the basis of these relationships can be identified by using statistical techniques applied to large sample studies, they lose unexplained variances that may be relevant for the understanding of business strategies (Harrigan, 1983).

Experience has shown that qualitative research is particular useful to explore complex behaviour and to discover the reasons for certain actions. Some scholars argue that qualitative research is exploratory in nature, and aims to deduce answers to 'why' and 'how' questions. On the other hand quantitative research aims to answer the questions of 'how much?' or 'how many?' A quantitative approach is usually applied when relationships have already been established and the study is concerned with the identification of which variables are significant, and to what extent, in a scientific way (Walker, 1997; Silverman, 2004; Neuman, 2006).

In spite of its value to the study of business strategy, many researchers have avoided using qualitative methods because of their apparent lack of validation and questionable generalizability. Another reason preventing some researchers from using these methods is the number of obstacles that have to be overcome when applying such an approach. These obstacles are: space barriers as the researcher cannot be everywhere at once, time barriers because of structures emerging and disappearing over short periods of time, the physical collection of data in full view of participants, and the researcher's presence (Aldag & Stearns, 1988).

The quantitative versus qualitative research paradigms has been a fervent debate in social sciences. However, the reality shows that both methods are valuable and that the researcher must choose the one that is more appropriate for his/her study. In fact, both quantitative

and qualitative research methodologies are needed to better understand phenomena. The combination of qualitative and quantitative methodologies has proved to be successful when applied to particular studies. Ultimately both methodologies pursue the same objective, to understand phenomena systematically and coherently (Onwuegbuzie & Leech, 2005).

Quantitative analysis when used in previous research to test Porter's (1990) model has not shed much light on the validity of Porter's (1990) analysis when applied to different industries. Those authors that have used a quantitative approach to test Porter's (1990) diamond found that the aggregated data tended to be too descriptive without revealing the cause of competitiveness among firms. Another drawback has been the difficulty in explaining the meaning of statistics without there being any reference framework of firm case studies to refer to. It is suggested that quantitative analysis may have difficulties in picking up on the complexities of a multi-dimensional theory such as Porter's (1990) diamond. Using quantitative analysis in this study it would have required the sacrifice of richness of description for precision.

Therefore, qualitative analysis of collected data was used to examine whether Porter's (1990) model of competitive advantage is an adequate conceptualization of success in the Uruguayan broiler industry. The researcher believes that the scope of the study required an interpretative and deductive reasoning, making the qualitative approach more suitable to address the objectives of the research. In doing that, the six main components of Porter's (1990) model were tested to see if they explain competitiveness within the Uruguayan broiler sector. The intensive survey research helped to determine reasons for competitiveness amongst the Uruguayan broiler companies and the areas where policies needed to be reinforced or enacted to compete in a regional market without barriers.

Qualitative Data Analysis

There are different techniques that have been used by qualitative researchers for the analysis of qualitative data. Some of the most popular techniques are the narrative, ideal types, successive approximation, the illustrative method, path dependency, and contingency, domain analysis, and analytic comparison (Neuman, 2006). In order to test Porter's (1990) theory, this study used the illustrative method. This method was selected because it can be used to test, illustrate or anchor a theory. When this method is selected

the researcher applies a theory to a specific case or single situation and organizes data on the basis of prior theory. Pre-existing theory is used as a guide to collect the data. Then the researcher analyses and interprets the data to confirm or reject the theory (Neuman, 2006). In this study, part of the interview plan was developed taking into account Porter's (1990) framework.

Interviews were recorded with a digital tape recorder, and a full transcript was made by the researcher. Later the data was translated into English, again by the researcher. Inevitably when a transcription from a tape recorder onto a piece of paper is made, some data are lost (Wengraf, 2001). To remedy this loss, the researcher took de-briefing notes after each interview. The researcher worked on the Spanish transcripts and once the categories and important themes were identified these were later translated into English. Scholars suggest that the accuracy of the interpretative analysis is enhanced if the analyst is involved with the data collection and transcription (Knodel, 1993). In this case, the data collection, transcription, and analysis were all undertaken by the researcher. All transcriptions were made using a computer-based word-processing programme. It took the researcher about eight hours to transcribe a one hour and fifteen minutes interview. All data was in textual form, whether recorded interviews; document analysis or notes from interviewees observation at meetings.

The use of computer software in qualitative analysis is widely known in academia. It is estimated that about 25% to 30% of academic qualitative analysis uses computer software (Fielding & Lee, 1998; Gibbs, 2002). Even though some researchers have expressed their reservations about the utility of computer software in qualitative analysis, the methodology seems to be widely accepted. There are more than 20 packages available for dedicated qualitative analysis. These packages can be categorized in the following four groups: text retrievers, text base managers, code-based theory builders, and conceptual network builders.

The reasons for antipathy to the use of computer software in qualitative analysis can be found in the following arguments:

i. Computers are linked with quantitative analysis. Some academics maintain that computers are good for numbers and counting but not for developing ideas and thinking.
ii. Computer software is seen as a limiter of creativity and insensitivity in interpretation. Moreover, it is argued that the highly verbal focus of software packages misses out two sources of meaning used by researchers; non-verbal material and aspects of interaction and group processes.
iii. As the use of computer software for qualitative analysis is associated by many with quantitative thinking, some academic researchers believe these software packages are superficial for conducting qualitative analysis.
iv. Another source of rejection relies on the fact that for some researchers, computer software puts an unacceptable distance between the researcher and the collected data (Caterall & Maclaren, 1998; Denzin & Lincoln, 1998).

For this study it was decided not to apply dedicated computer software to the analysis of the data. The researcher does not believe that the use of such packages would have undermined the quality of the conclusions. However, from the literature, it seems that the application of computer software in qualitative analysis has not demonstrated superior quality of output compared with conventional approaches. Moreover, the researcher has successfully previously been involved in research projects and decided to maintain the methods applied in previous research work. The researcher found it relevant to be immersed in the process of analysis as a way to detect the meaning of the interviews and to draw the best conclusions out of the data.

The analysis of collected data followed a process of three steps involving:

i. Interpretation of the data. The first stage implied an interpretation of respondent's answers/comments. At the outset of the analysis the researcher listened several times to tape recordings to become immersed in all aspects of the material. Listening to interviews the researcher was able to pick up things like tone, energy levels, and so on that otherwise would have not detected by reading a full transcript. For instance, a silence may have different interpretations. It could be that the respondent is avoiding the question, or trying to change the subject, or he/she is not able to talk about it.

ii. Analysis. After the interpretation stage, data was sorted and ordered. Here different parts of the material were grouped under topics, categories or concepts. During this stage an 'analysis headings' approach was adopted. In this approach interviews answers and researcher observations were classified and arranged on separate sheets of paper as 'notes under headings'. These notes were taken from transcripts and listening to interviews. The researcher preferred this approach over the full matrix approach because the full matrix approach entails the risk of losing the essence of qualitative enquiry due to the rigidity of the pre-set boxes. Moreover, the 'analysis headings' approach is more likely to be used for smaller samples as in this study, and allows room for flexibility of thinking throughout the analysis (Ereaut, 2002; Neuman, 2006). The objective was to make the data manageable. In this stage the researcher selected for further attention aspects of the data that were considered relevant or interesting for the study.

iii. Interpretation (level 2). During this stage, common patterns, differences and anomalies were identified. Then the researcher interpreted the meaning of all the data and the implications for the Uruguayan broiler industry.

The data collected is presented in chapter eight, showing the relevant insights made by the interviewees. As the six interviewed firms account for the 93% of the Uruguayan broiler market the findings of this research are a real representation of the universe of Uruguayan broiler companies.

Limitations of the selected approach

As all methodologies have their inherent limitations: the choice of a particular method will limit the conclusions that can be drawn. In order to offset the flaws of using one methodology some scholars argue that it is advisable to use a variety of methods. This approach is called triangulation and was first used in social science by Campbell and Fiske (1959). Triangulation can be applied to the objective of measurement, data collection, or research strategy. With the objective of minimizing the flaws of using one method, the researcher employed primary data from six firms as well as secondary data and primary data from diverse government sources mentioned above. It has to be noted that even though secondary data was produced by the government, this data is not available for public use. Even though the use of different sources has improved data validity (by

verifying the opinion of key actors), the lack of published government statistics affects the validity content of this research and therefore remains one of its limitations.

The problem of representativeness was overcome by interviewing six out of the seven broiler firms in Uruguay. Ideally, the researcher would have liked to interview people from the black market but it was not possible to access to them for the reasons mentioned above. Moreover, they are very small producers making up for no more than 1% of the total market. Therefore, it can be inferred that the findings of the study are representative of the Uruguayan broiler sector.

Within a deductive approach, this study opted for an industry-level case study research strategy. The main drawbacks associated with the use of this research strategy are: the difficulty in interviewing a key-decision maker, non-response bias, the lack of representativeness, the validity of the data, and the personal bias of the interviewer (Moser & Kalton, 1971).

In this study the researcher managed to interview the appropriate person. By interviewing the principal person in charge, the subjectivity of a representative is avoided. However, it may happen that by interviewing only one individual per firm, the interviewee may overestimate the importance of his/her role in the firm's dynamics. In this study this limitation was overcome by interviewing people from middle and junior management positions as well as people from the government. The analysis of the data indicates that because of the size and structure of Uruguayan broiler companies, generally, there is only one person responsible for taking most of operational management decisions as well as strategic management decisions. This contrasts with larger firms where decisions are taken by a group of individuals in the form of a committee, which may be: a group of owners and/or senior management in the case of private companies; a board of directors in the case of public companies; or senior partners in professional practices.

Non-response bias was not a weakness of this study as all respondents were keen on openly giving their opinion on the topics targeted by the research. However, most of them requested the data should be treated with confidentiality and preferred to be anonymous. When they requested confidentiality the interviewees wanted to be sure the information of the interview would not be accessed by other Uruguayan broiler companies, however, they

all agree with the data being presented and critically analysed in the research project. This behaviour was expected due to the intense competition among firms within the sector.

The last drawback associated with the research strategy applied in this study is the personal bias of the interviewer. Personal interviews depend on interpersonal transactions. One of the sources of error of the personal interview is the interviewer who collects the data. There continue to be numerous studies reporting the impact of interviewer behaviour on data collection (Mcbee & Justice, 1977). There are two main sources of error associated with the interviewer: unsystematically and systematically. Unsystematic error refers to the interviewer's lack of critical skills to conduct an interview. For example, an interviewer unable to establish good rapport with the respondent might increase the respondent's fears of the possible negative consequences of his/her answers.

Systematic errors are related to interviewer behaviours or idiosyncrasies. For example, word usage tends to vary a lot among interviewers and therefore if the interviewer does not record their respondent's words verbatim, then the validity of analysis may be undermined by the interviewer's word preference. These errors may be of concern when attitudinal, open-ended, and dichotomous questions are used (Boyd & Westfall, 1970). In order to minimize the interviewer bias, all interviews should be conducted in the same tone of voice, with a uniform way of interpreting and asking questions, the same information should be provided to respondents, the interviewer should not allow the respondent to perceive his/her opinions toward the topic under study, and a verbatim transcription of respondent's words should be used (Bailar, Bayley & Stevens, 1977). Because it would be utopian to address all these factors there is always a source of bias introduced by the interviewer. However, the researcher has made every effort to diminish interviewer bias. It has to be noted that the researcher has experience and training in data collection and interviews from his previous degrees and professional career. Therefore, it is expected that interviewer bias has not profoundly affected the accuracy of the data collected in this study.

Qualitative interview data usually involves multiple sessions with participants, including follow-up interviews to clarify and expand participant descriptions during the analytical process. Even though the researcher believes that all the key themes were addressed during the in depth-interviews, further discussion might have helped to reinforce the findings of

the research. Another limitation might have been the fact that time and finance constraints prevented the researcher from conducting an in-country's pilot study, which would have theoretically allowed further improvement of the structure of the questionnaire.

Full transcripts of interviews were made by the researcher, who later translated them into English. Collected data was not checked by other people for content validity. It has to be noted that cost and time constraints prevented the researcher from addressing this issue. Because back-translation was not addressed this seems to be one of the major limitations of this research.

Summary

Porter's (1990) 'diamond' was selected as the best explanatory framework to analyse the dynamic of the Uruguayan broiler industry. Within a deductive approach, an industry-level case study seemed to be the best research strategy to test Porter's (1990) theory and address the questions of this research.

This chapter reviewed what data was collected, how it was collected, and whom the data was collected from and how it was analysed. In order to get the most useful results from the research, six broiler companies from a total of seven were interviewed. This was supplemented with interviews with people working for government organisations. In-depth interviews were carried out with key-decision makers of the companies and government employees. The semi-structured questionnaire concentrated on general aspects of the Uruguayan broiler industry and Porter's factors of competitiveness. The illustrative method was selected to confirm Porter's (1990) hypothesis. The analysis of qualitative data followed the following steps: understanding of respondent's answers, analysis, and interpretation.

A realism research methodology was adopted to meet the questions of the research. Therefore, the conclusions may be embedded with the main limitation of this methodology which is its lack of representativeness. Six out of seven companies from the universe of the Uruguayan broiler industry were interviewed. However, it could be argued that Porter's (1990) theory was tested only in one industry and more industries should be tested before conclusions are made about the validity of Porter's framework when applied to a developing country such as Uruguay. The analytical conclusions from multiple case

studies from diverse industries are more powerful than those coming from companies that belong to the same industry. Therefore, it might be interesting to conduct this research in other Uruguayan industries in order to tackle the limitation of representativeness. The next two chapters present the results of the study and a discussion, with the final chapter presenting conclusions from the study.

Chapter 8

Findings from Qualitative Interviews

This chapter presents the results of the in-depth interviews carried out with key-decision makers (owner-directors), professionals (middle and junior managers) from the Uruguayan poultry industry, and government employees. The findings are presented in two sections. The first part describes those findings that may help elaborate policy recommendations to assist Uruguayan poultry firms in preparing to compete with international poultry firms in a regional economic block without barriers. The second section deals with information that was elicited to test components of Porter's (1990) diamond system.

As described in chapter seven, interviewees were to be anonymous and therefore the data presented in this chapter do not reveal their names. In spite of the desire to remain anonymous, respondents authorised the researcher to mention the companies they belong to. Quotes from owner-directors are identified as OI; quotes from professionals are identified as PI; and quotes from government employees are identified as GI. A verbal agreement was made with all respondents to guarantee that collected data would be only used within the scope of this research.

Many argue that the results of in-depth interviews should be expressed in a descriptive, rather than a numeric form. Likewise, because the samples are purposive, rather than random, it is unwise to convert the results into percentages. However, the use of modifiers such as, some, several, many, all, or the majority can be used. These are not considered part of a statistical analysis, but rather an aid to describe the qualitative data (Miles & Huberman, 1994). In this research, a descriptive approach was adopted to present the qualitative collected data. Percentages are only used to describe general aspects of interviewed firms.

Firms' Overview

This section will present a general overview of each firm's story and development. This information will help to identify the main weaknesses and strengths of the Uruguayan poultry industry. Appendix 3 (English version) and appendix 4 (Spanish version) presents

a transcript of an interview with the owner-director of Avicola del Oeste, who was happy to be identified.

Categories of Poultry Firms

The interviewed firms illustrate the diversity of Uruguayan poultry companies. The results have shown that there are three categories of poultry firms in terms of size (large, medium, and small) and different degrees of emphasis put on the firm's strategies (price or/and quality). All categories have been covered by the interviewed firms. The ages of the firms targeted in this study ranged from a minimum of 13 years up to a maximum of 34 years. Respondents indicated that because of logistical reasons their businesses are located across Montevideo (the capital) and the province of Canelones.

> *"...Due to logistic reasons, costs of production, the possibility to be close to the largest markets of consumption, and physical resources availability all poultry firms are located in the outskirts of Montevideo and Canelones..."* (PI).

Respondents from government sources (The Chamber of Industries of Uruguay) highlighted the fact that the control of the Uruguayan poultry industry is in the hand of few companies that are all located relatively close to Montevideo, the capital city of Uruguay.

> *"....the biggest poultry firms are all located within close distance of Montevideo, where the mayor portion of the population lives.... at the same time the industry is concentrated and the big players supply and control the biggest centres of consumption... smaller local producers with less resources and less sanitary controls distribute to local shops within rural areas of the country..."* (GI).

The six companies interviewed with the purpose of fulfilling the objectives of the study are:

i. Calpryca
ii. Pollos Tenent (Casa Quinta)
iii. Avicola del Oeste

iv. Avesur
v. Avicola San Bautista
vi. Avicola del Remanso

Qualitative data indicated that the Uruguayan poultry industry has improved its competitiveness against the other meat chains and has shown a steady growth in chicken meat output. Several interviewees stated that the industry underwent a period of high speed growth between 1995 and 2000.

> "*...From my point of view the end of the nineties was one of the best moments for poultry firms. We expanded our businesses a lot and we managed to gain consumers from other meats, mainly beef...*" (OI).

However, respondents mentioned that this growth in chicken meat output has regressed during times of economic crisis such as the one that hit the MERCOSUR market in 2001-2002. From 2002 demand has been recovering and many technicians from the interviewed firms are optimistic about the possibilities of increasing *per capita* chicken consumption.

> "*...I believe that Uruguayan consumers will continue increasing per capita chicken consumption. If we look at the statistical data there is no reason to think in another way. In fact since its inception the only moment when the chicken consumption stop growing was due to a severe crisis that affected the consumption of all products...*" (PI).

Representatives from the government also felt confident about the potential of chicken consumption. Interviewees from the Chamber of Commerce and exports of Agricultural Products and Agro industrial Products stated that:

> *"...considering the consumption growth rate of last years, the level of poultry consumption of our neighbour's countries and the similarities with those countries' population in terms of consumption habits, I think there is still a long way to go, and this means that the industry has the potential to increase consumption..."* (GI).

> *"...The industry has gone through different development stages in terms of product presentation and product development to become more competitive...before the eighties consumers could only buy a whole chicken but now they can find different kind of chicken cuts, and different presentations. This shows the ability of producers to adapt to consumer needs.... we believe that there are still opportunities to conquer new markets and to increase consumption on current markets..."* (GI).

Respondents emphasized that the development of the Uruguayan poultry industry is linked to a company (Pollos Moro) which went bankrupt in 1998. Several interviewees stated that the owner of Pollos Moro was the pioneer of the industry. He started the business in the early sixties. Before that poultry in Uruguay was largely undeveloped. Three technicians (Avicola del Remanso, Avesur and Calpryca) indicated that the company grew very fast from its inception, and before leaving the market, it controlled fifty percent of the poultry businesses. According to them, the policy of the company was to continually invest in technology. Respondents emphasized that the levels of automatization and quality control were higher in Pollos Moro than in any other of the firms currently operating in the poultry industry. The bankruptcy of Pollos Moro was associated with fraudulent accounting practices.

> *"...Mr. Moro initiated his poultry career at a very young age. He was an idealist, a visionary, the one responsible for transforming poultry in an industry. Before Mr. Moro came onto the scene poultry was a side business for farmers..."* (PI).

Market Share

Interviewees indicated that Pollos Moro was the only Uruguayan poultry firm during the sixties. Then in the seventies two new firms entered the market. Pollos Tenent (Casa Quinta) was established in 1973 and Calpryca in 1976. The results have shown that since Pollos Moro left the market these two companies have become the leaders of the poultry industry controlling 48% of the market share.

Respondents stated that Avicola el Oeste, Avesur and Avicola San Bautista were all established in the early eighties. Quantitative data indicates that each company handles

between 11% and 13% of the market share. The rest of the industry is composed of the two smallest firms (Avicola del Remanso and Avicola Frontini (Melilla) which were established in 1992 and 1994 respectively. At the time of the interview Avicola del Remanso controlled 9% of the market share and Avicola Frontini 7% of the market share. The owners of the six interviewed firms indicated that they started out their businesses as chicken contract growers.

> "*...In spite of the poultry industry having two companies with a larger market share than the rest of the players there is not a leader that dominates the market such Pollos Moro was in the past...*" (PI).

> "*...A difference with other agribusiness sectors such as rice were there is a leader that fixes a price and then the rest of the companies are followers, in the chicken industry no company has enough power to play the role of a leader...This may be the reason why there are constant price wars...* " (GI).

The respondents' view on market share is that in the Uruguayan poultry industry there is no firm with enough power to influence the chicken price.

Legal Status

One common factor to all Uruguayan poultry firms is that they were established as family-owned poultry breeding farms businesses and still remain under family control. Owners of all the firms indicated that because poultry is an activity with many stages, which generates low rates of return per link, all of them decided to vertically integrate their businesses in order to harvest the economic benefits of each stage. Respondents emphasized that all poultry firms have their own feedlots, incubation plants, slaughterhouses, contracts with breeding farms, and distributors.

> "*...Our firm as all Uruguayan poultry firms started as a family business. Originally three brothers who had breeding farms in the province of Canelones decided to integrate their businesses in order to improve the efficiency of production and commercialization. The process of integration has deepened since the three brothers joined their businesses and today the*

company is vertically integrated having their own reproducers, breeding farms, incubating plant and distribution channels..." (OI).

"...One interesting thing is that unlike other agribusiness sectors such as brewery or honey production which have merged their businesses with foreign companies, the poultry industry was always reluctant to form any sort of alliances with foreign companies...I am not sure about the reason of this behaviour but if I have to guess I would say that it is linked to the idiosyncrasy of Uruguayan broiler owners who cannot understand certain aspects of the currents markets like for example globalization... " (GI).

It is important to note that all interviewees considered their company to be vertically integrated because they controlled all of the production chain from the production of rations up to the point of sale. However, the results have shown that there were only two companies (Calpryca and Pollos Tenent) which own their own chain of restaurants with 55 and 70 outlets respectively. None of the interviewed firms controlled the growing of raw materials to produce feed for broilers.

Decision-makers

The owner-directors of the majority of firms indicated that they were fully engaged in decisions concerned with operational management and strategic management. They emphasized the fact that they make most of the decisions from the selection of suppliers to sales strategy. While this aspect of the business is common across all firms, the results have shown that there is, however, a difference in the educational background of the owners-directors. The owners of Calpryca and Pollos Tenent belong to a middle class and received better education than the owners of the rest of the firms, who were poultry farmers with poor academic education, but a lot of experience in the poultry sector. Respondents from Calpryca and Pollos Tenent indicated that businesses were run by the second generation of owners who hold University degrees in a variety of subjects. Qualitative data indicated that the rest of the companies which were established a few years later were still run by the original founders. Technicians of Calpryca and Pollos Tenent stated that to a certain extent their opinion was taken into consideration by the owners-directors before taking those decisions which may have a big impact on the company's businesses. However, technicians from the rest of the targeted firms claimed

that their opinion was rarely considered by the owners-directors of the firms. They expressed the view that their opinion was only considered when it was related to a specific technical aspect of the business such as poultry health management.

> "*...The owner of the company takes most of the decisions of the company. He is involved in all aspects of the business from production to commercialization. His level of education is quite low. In spite of this, he listens to the team of technicians and thinks a lot before taking those decisions that might affect the direction of the company. In general, his decisions are based on technical information...*" (PI).

Respondents from The Ministry of Agriculture stated that they were not certain about the decision-making process within Uruguayan broiler companies. They emphasized that Uruguayan broiler companies are not very keen to share company information with government organizations.

Firms' Changes

Respondents agreed that the main changes in the firms' businesses over the past ten years have been a reduction of costs of production, a reduction of manufacturing costs, and a steady but slow increase in production output.

> "*...I would say that the main changes that the poultry industry has undergone in the last few years have been: a reduction of the cost of production, an increase of market share against other meat competitors, a verticalization of the business, a decrease of profit margins against supermarkets, and an increase of competition...*" (OI).

> "*...the entrance of big supermarket chains to the Uruguayan market has created a completely new environment for agribusiness suppliers in general. Within this new scenario many small businesses such as butchers had to adapt their strategies to survive in this new more competitive market. There are not big differences in the quality offered by broiler companies. The main difference is in the price. Big supermarkets have the ability and the power to buy cheaper and that is their key advantage over competitors.*

and they use their buying power to negotiate with Uruguayan broiler producers more beneficial agreements. This represents one of the biggest changes within a new market in which chicken firms have had to reduce production costs to compensate the decline of profit resulted from supermarkets changing the conditions of trade... " (GI).

Broiler Development Constraints

When owners were asked about the main factors that have constrained a major development of company's businesses there were two different answers. Respondents from Pollos Tenent, Calpryca, Avicola del Oeste, and Avesur pointed at tax evading firms as the major limitation for the development of their businesses. Interviewees from Avicola San Bautista, and Avicola del Remanso claimed that the lack of support from either the government or private companies have been the main determinants preventing a major development of the sector. Yet, Avicola del Oeste and Avesur interviewees mentioned that the government had, some years ago and for a very short period, an export incentive policy.

Interviewed technicians argued that different factors have limited a major development of their company's businesses. For them, the lack of owner's management capability (Calpryca and Pollos Tenent being the exception) is the main constraint for the development of incumbent firms. Respondents also pointed out that secondary factors that had limited the development of the firms were: very limited access to credit, the necessity to upgrade the capacities of the poultry factory, and the fact that for a few companies the main business was to avoid taxes rather than raising chickens.

"*...the main factors further limiting the development of our company has been the lack of managers with the required training to face the changes of the industry, tax evaders, and a technology setback...*" (OI).

Respondents from the Ministry of Agriculture emphasized that the new government has done all it could have done to control tax evaders. In fact they mentioned that after rigorous inspections, three companies have been penalized. They also stated that further inspections will be conducted in the near future to ensure that all companies comply with tax regulations.

Strategic Plan to Face Competition from MERCOSUR Firms

Many interviewed owners and technicians agreed that there is no strategic plan to face the inevitable competition from other members of MERCOSUR. Respondents indicated that the whole sector has been lobbying the government to keep the sanitary barrier in place. Several interviewed owner-directors believe that the fact that Uruguay is free of Newcastle disease will help the Uruguayan poultry industry to maintain the current barrier for a long time. In fact they stated that a loan from the Ministry of Agriculture will be used to sample the Uruguayan poultry industry in order to prove "the free of Newcastle disease status" of the country. On the other hand, interviewed technicians believe that the owners of the firms have a short-term mentality that might put the entire industry at risk. According to them, barriers could fall at any moment leaving the industry in a very precarious situation. In fact, they mentioned the case of a leading Argentinian company (Tres Arroyos) that may enter the market very soon, thereby changing the 'rules' of the poultry businesses. Technicians emphasized that if Uruguayan companies did not offer the same standards of quality as Tres Arroyos they might lose market share against the future Argentinian competitor.

> *"...The company has not developed any strategy to face the eventuality competition from other members of MERCOSUR because we believe is something that will not happen in the short term. At the moment poultry companies are putting pressure to keep the barrier in place because with the current price of crops it would be very difficult to compete with more efficient producers from Brazil and Argentina..."* (OI).

Respondents from the government are also aware of the potential risk that the removal of the 'sanitary barrier' would represent for national industry.

> *"...the technology used by Brazilian and Argentinean poultry companies is fairly superior to that used by Uruguayan companies. So if the 'sanitary barrier' was to be removed the Uruguayan poultry producers would be in an inferior position to compete with Brazilian and Argentinean companies. The government will do what it is necessary to protect the excellent sanitary status of the Uruguayan broiler industry. However, if the development of MERCOSUR continues and Brazilian or Argentinean*

broiler producers can objectively prove that they are free of Newcastle disease the barriers will disappear leaving the industry without protection...This happens in the past with the sugar industry and it is part of the process of opening the Uruguayan economy..." (GI).

Competitiveness in the Context of Porter's Model

This section will concentrate on the main findings to come out of the six interviewed firms as to why and how competitiveness has occurred in the targeted industry. Table 22 and table 23 respectively provide a breakdown of the in-depth interviews with owner-directors and professionals within the analytical framework of Porter's (1990) model. In chapter 9, the key factors described by Porter's (1990) 'diamond' will be confronted with the collected data to evaluate if they are good predictors of competitiveness for the selected industry.

Tables presented below depict the following symbols: ✓, x, x*, and PS. The meaning of these symbols is explained as follows:

✓ means that qualitative data supports Porter's (1990) hypothesis.

x means that qualitative data does not give support to Porter's (1990) arguments.

x* means that Porter's (1990) argument remains valid if the success of the Uruguayan poultry industry is assessed in a regional context.

PS means that Porter's (1990) hypothesis are only partially supported.

Table 22: Determinants of Competitiveness in Interviewed Firms (owner-directors) within the Analytical Framework of Porter's Model.

	Calpryca	Pollos Tenent	Avicola del Oeste	Avesur	Avicola San Bautista	Avicola del Remanso
Factor Conditions						
Human resources	✓	✓	✓	x	✓	✓
Physical resources	✓	✓	✓	✓	✓	✓
Knowledge resources	✓	✓	x *	x *	x *	x *
Location factors	✓	✓	✓	x	x	✓
Infrastructure resources	✓	✓	x	x	✓	✓
Demand Conditions						
Demanding customers	✓	✓	✓	✓	✓	✓
Large number of independent local customers	x	x	x	x	x	x
Building long relationships with key customers	✓	✓	✓	✓	✓	✓
Local demand anticipates buyer needs in other markets	x *	x *	x *	x *	x *	x *
Export markets	x	✓	x	x	x	x
Firm Strategy, Structure, and Rivalry						
Decision-makers with clear goals	✓	✓	✓	✓	✓	✓
Compete on cost	✓	✓	✓	✓	✓	✓
Compete on quality	✓	✓	✓	x	x	x
Motivated managers	✓	✓	✓	✓	✓	✓
National prestige	✓	✓	✓	✓	✓	✓
Professional technicians	✓	✓	X	✓	x	✓
Good work relationships	✓	✓	✓	✓	✓	✓
Ongoing investment to upgrade skills	x *	✓	x *	x *	x *	x *
Domestic competition	✓	✓	✓	✓	✓	✓
Competition with foreign firms	x *	x *	x *	x *	x *	x *
Related and Supporting Industries						
International competitive supplier firms	✓	✓	✓	x	x	x
Coordination between local suppliers and firms	✓	✓	✓	✓	✓	✓
Cluster of supporting industries	Partially supported (PS)	PS	PS	PS	PS	PS
Concentration of domestic rivals	✓	✓	✓	✓	✓	✓
Global successful related industries	x	x	x	x	x	x

Government Policy						
Business and technical advice	x *	x *	x *	x *	x *	x *
Tax measures	✓	✓	✓	✓	✓	✓
Government grants	x *	x *	x *	x *	x *	x *
Chance events						
Military conflicts	✓	✓	✓	✓	✓	✓
Sanitary events	✓	✓	✓	✓	✓	✓

x *: Porter's (1990) argument remains valid if the success of the Uruguayan poultry industry is assessed against its competitors from Brazil and Argentina.

Table 23: Determinants of Competitiveness in Interviewed Firms (middle and junior managers) within the Analytical Framework of Porter's Model.

	Calpryca	Pollos Tenent	Avicola del Oeste	Avesur	Avicola San Bautista	Avicola del Remanso
Factor Conditions						
Human resources	✓	✓	✓	✓	✓	✓
Physical resources	✓	✓	✓	✓	✓	✓
Knowledge resources	✓	✓	x *	x *	x *	✓
Location factors	x	✓	✓	✓	✓	x
Infrastructure resources	✓	✓	x	x	✓	✓
Demand Conditions						
Demanding customers	✓	✓	✓	✓	✓	✓
Large number of independent local customers	x	x	x	x	x	x
Building long relationships with key customers	✓	✓	✓	✓	✓	x
Local demand anticipates buyer needs in other markets	x *	x *	x *	x *	x *	x *
Export markets	x	✓	x	x	x	x
Firm Strategy, Structure, and Rivalry						
Decision-makers with clear goals	x	✓	x	x	x	✓
Compete on cost	✓	✓	✓	✓	✓	✓
Compete on quality	✓	✓	✓	x	x	x
Motivated managers	✓	✓	✓	x	✓	x
National prestige	✓	✓	✓	✓	✓	✓
Professional technicians	✓	✓	✓	✓	✓	✓
Good work relationships	x	✓	x	x	x	x
Ongoing investment to upgrade skills	x *	x *	x *	x *	x *	x *
Domestic competition	✓	✓	✓	✓	✓	✓
Competition with foreign firms	x *	x *	x *	x *	x *	x *
Related and Supporting Industries						
International competitive supplier firms	✓	✓	✓	x	x	x
Coordination between local suppliers and firms	x	✓	✓	✓	✓	✓
Cluster of supporting industries	Partially supported (PS)	PS	PS	PS	PS	PS
Concentration of domestic rivals	✓	✓	✓	✓	✓	✓
Global successful related industries	x	x	x	x	x	x

Government Policy						
Business and technical advice	x *	x *	x *	x *	x *	x *
Tax measures	✓	✓	✓	✓	✓	✓
Government grants	x *	x *	x *	x *	x *	x *
Chance events						
Military conflicts	✓	✓	✓	✓	✓	✓
Sanitary events	✓	✓	✓	✓	✓	✓

x *: Porter's (1990) argument remains valid if the success of the Uruguayan poultry industry is assessed against its competitors from Brazil and Argentina.

Factor Conditions

Factor conditions or factors of production as noted within Porter's (1990) review are the basic inputs available within a nation. For the industry targeted in this thesis these factors are assessed according to the criteria of human resources, physical resources, knowledge resources, and infrastructure available throughout each company over the last ten years.

Knowledge Resources

The majority of managers and professionals from the six interviewed firms stated that their firms had not been involved in research with either private or public institutes. The results have shown that Uruguayan poultry firms buy technological packages mainly from Brazil and occasionally from the US. Interviewed technicians indicated that they are aware of the fact that agricultural technological packages are usually developed taking into account the peculiarities of a country. Because of that Uruguayan firms purchase technological packages from abroad and then make the necessary adjustments to fit the productive conditions of Uruguay.

> "*...The firm has not invested in research. I believe that it is more valuable to buy packages from countries where poultry is more developed and then adapt those packages to the conditions of our company...*" (OI).

It was mentioned by three of the respondents (Calpryca, Avesur, and Avicola del Oeste) that in the process of adjusting a foreign technological package the Uruguayan technicians emphasize economic issues over quality ones.

> "*...At the moment what determines the feasibility of poultry businesses is the price of our products and therefore we focus on those factors that affect the price in order to remain competitive...*" (PI).

When asked to be more specific about this theme, interviewees pointed at the following examples. Mexico has been in the forefront of research about chicken rations. Several years ago, Mexican nutritionists released the results of scientific studies which suggested that it was feasible to replace 20% of the corn of a broiler ration with sorghum. Since Uruguay is a country with excellent conditions to grow sorghum the Uruguayan technicians not only adopted this technology but increased the amount of sorghum into the ration up to a level of 55%, which is unique in the world. The rapid substitution of corn by sorghum was due to the price advantages of sorghum against corn. The other example relates to the use of bone meal in poultry rations. German studies indicate that the use of more than 150 kg of bone meal per ton of ration results in the breakage of 2% of egg shells. The reason for that is the large amount of phosphorus contained in bone meal. In spite of this, technicians from three firms (Avesur, Calpryca, and Pollos Tenent) remarked that, Uruguayan poultry firms have incorporated more than 150 kg of bone meal per ton of ration because savings on ration more than compensates for the lost of broken eggs. In Uruguay bone meal is very cheap and its use in rations is still allowed.

Even though the majority of respondents stated that they had not been involved in scientific research, two companies (Calpryca and Pollos Tenent) have hired local independent consultants to conduct market studies. Respondents from these two companies also stated that they have contracted Brazilian poultry experts to evaluate the productive and incubation businesses.

Interviewees from government organizations explained why there is no funding to research in poultry in general. The following quote summarizes their views:

> "*...as a developing country we have a very limited budget to invest in research, we have to prioritize and allocate most of these resources to research in those industries on which the economy of the country relies on. We allocate most of the resources on the following industries: beef, crops, rice, forestry and sheep...*" (GI).

Human Resources

Local human resources were identified by several interviewees (both owners and technicians) as one of the factors limiting a further development of the industry. According to them it is very difficult to find, in the domestic market, employees with the skills/knowledge either to work in poultry farm production jobs or managerial positions. For instance, one owner of a company believes that due to the lack of skills of his middle manager the company is now facing financial constraints. He mentioned that The University of the Republic in Uruguay does not offer courses in management or business strategy. Therefore, according to his view, the very few professionals that have a background in management are those that have had the chance to attend courses in a private University. The majority of technicians indicated that going to a private University in Uruguay is considered a luxury that only a minority can afford.

> "*...I think that one of the problems of the poultry industry is the lack of people with management skills. I have always worked as a technician and even though I have to assume responsibilities that are not in line with my technical training I was never offered the possibility to increase my knowledge in management that is relevant to my role...*" (PI).

Owner-directors from the three larger companies stated that because of the lack of skills of domestic managers they often consult foreign experts before taking important decisions that may affect the future of their businesses. Avicola del Oeste and Avicola San Bautista interviewees stated that a high proportion of managers in Uruguay do not properly understand professionalism.

> "*...It is very difficult to find qualified people to work in the poultry industry. Because of that, we have been forced to hire employees that do not have the skills to face the competitive and changeable environment of the poultry businesses. I believe that this is a consequence of the poor standards of education of The University of the Republic...*" (OI).

Interviewees from the Ministry of Agriculture and The Chamber of Industries of Uruguay stated that they were not aware about the changes of University programmes or the lack of skills of veterinary graduates mentioned by broiler companies. They also mentioned that

the University of the Republic in Uruguay operates as an independent body with the authority to modify the programme of a course to benefit the student.

The results have shown that even though it is difficult to find employees to work in poultry farm production or managerial positions, the Uruguayan labour market has been able to successfully supply the poultry sector with well trained technicians. However, the industry is currently facing the challenge of finding new technicians to take over the positions of those technicians who are reaching the age of retirement. Respondents emphasized that this situation has become critical due to the age of the current technicians who are all in their late fifties or early sixties. Respondents indicated that this gap is the consequence of a change in the academic programme of the Veterinary University in Uruguay. In the old programme there was a module dedicated to teaching poultry subjects. However, in the new programme poultry is not an independent subject anymore, but was included as a side unit within the horticulture department. Because of this all owner-directors believe that the new graduate technicians have very limited knowledge on poultry and lack the required skills to join the industry.

Collected data has shown that Uruguayan poultry firms in general do not offer an employee training and development programme. Owners of the firms believe that it is the employees' responsibility to develop the technical/managerial knowledge to face the demands and challenges of the job. All the technicians indicated that the only way to further improve their knowledge of the poultry industry was through personal effort. Some of them stated that the only benefit they had received to take courses was some days off work but they had never received any form of financial assistance. On very rare occasions a few technicians have received training to cope with the outbreaks of diseases such as salmonella enteritiris. This training has been done to remedy particular problems and does not form part of a planned strategy. However, two of the firms (Pollos Tenent and Avicola del Oeste) recently started to train those employees that work in the sales department. For them, there are available courses on sales. Both owners from the mentioned firms stated that the main objective of the course was to have their employees better prepared than the competitors in order to increase market share.

> *"...I have worked for a poultry company as a veterinarian for over 27 years. During that time I have never received any kind of training. In this*

industry the only way to develop is through personal investment and effort..." (PI).

Physical Resources

Results show that processing and industrial poultry machinery is sourced from abroad or copied mainly from Brazil. There is not a company in Uruguay that produces machinery to supply the demands of the domestic chicken industry. The three companies with more resources (Calpryca, Pollos Tenent, and Avicola del Oeste) have also purchased machinery such as poultry watering systems or feeders from Holland and US. Interviewees from the remaining four firms indicated that they copy Brazilian poultry machinery. They copy the machinery plans from internet when available or send an engineer to take pictures of the machinery that later is built in Uruguay under his/her direction.

"*...If my business requires sophisticated poultry equipment I send one of the employees that work in the machinery department to study the possibilities to source this equipment from the south of Brazil. When the machinery is not very complex I decide to produce it in Uruguay due to price benefits...*"(OI).

Several respondents indicated that there has not been any recent domestic economic development that has influenced the progress of the firms. Interviewees emphasized that the development of the industry was a consequence of individual efforts. Respondents from Avesur and Avicola del Oeste mentioned that development of the port structure would foster the progress of poultry companies. The interviewees stated that port operating facilities do not present limitations for exporting; however, there are some constraints that prevent them from importing large amounts of grain.

"*...Brazilian and Argentinian poultry firms have been benefited from diverse subsidies. Because of these policies the cost of crops are cheaper than in Uruguay. Rations are the main cost of chicken production. If Uruguayan poultry firms are not able to access to cheaper grain it will be very difficult for them to remain competitive in a free market. At the moment the Uruguayan port structure prevents our firms from accessing cheaper grain...*" (PI).

Uruguay has two main ports, one in Montevideo the capital of Uruguay, close to poultry production areas. The other port (Nueva Palmira) is situated in the south west of the country where the larger crop production is located. According to the respondents, the first problem of the Uruguayan port structure is the lack of mill capacity of Montevideo's port. They mentioned that the mill's capacity of Nueva Palmira would not constrain poultry demands for grain, but the cost of transporting the grain from Nueva Palmira to the main areas of poultry production make this option unfeasible. The second problem is that Uruguayan ports are not deep enough to accommodate large cargo ships. Respondents' views on this topic are that if the Montevideo harbour is not deepened, the Uruguayan poultry industry will never be able to take advantage of the economies of scale available through buying large amounts of grain. At the moment, if the Uruguayan companies cannot satisfy the demand for grain from the domestic market they do not have any choice but to buy from the Argentinian market. The majority of respondents agreed that the port structure is preventing the poultry industry from buying in alternative markets.

Interviewees from The Chamber of Commerce and Exports of Agricultural Products and Agro industrial Products also believe that the Uruguayan economy would benefit from a restructure of its main port.

> *"...the government is assessing the viability of restructuring the main port of Uruguay in the capital of Montevideo, and although it is of public knowledge that this is necessary for the national industry, it might take longer than we would like to make the decision of when make this investment or whether the port should be privatised..."* (GI).

Location Factors

Qualitative data has shown that some location issues were considered to be very important for the company's activities, while others were considered irrelevant for the success of the businesses. Most interviewees agreed which location issues were important and which ones were irrelevant. Respondents emphasized that, due to the impact of transportation costs, it is relevant for any poultry company to have the abattoir and feed mills close to the poultry farms. Respondents stated that the distance between the contract growers and the abattoir and feed mills of the company should not be more than 70 Km.

> *"...The only way to remain competitive in the Uruguayan domestic market is minimizing costs. Transportation costs along with feed have a big impact on our cost structure and therefore it is vital to locate our centres of production close to Montevideo..."* (OI).

All companies indicated that they have their poultry farms, abattoir, and feed mills in Canelones. This province was selected as a location for the businesses because of the logistic advantage of being the closest province to Montevideo- the biggest market for consumption in Uruguay. Being close to the largest market for poultry consumption was seen important not only for the impact of transportation costs, but also for the importance of being immersed in the day to day reality of a dynamic market in which prices change very fast. The majority of owners and technicians agreed that the only way to detect new consumer trends is by having part of the businesses located close to poultry consumption markets.

> *"...This is a very dynamic market with prices changing overnight. We have to keep an eye on our competitor's price strategy. We have to be located in the largest centres of consumption in order to be able to respond in time to any price change of our competitors..."* (OI).

This was also supported by representatives from the Ministry of Agriculture (statistics department) who stated:

> *"...the production of poultry in Uruguay is mainly located in a belt surrounding the urbanized area of the south of the country...broiler firms headquarter are situated near the capital of Montevideo where more than fifty percent of the total Uruguayan population lives..."* (GI).

Technicians from Avicola San Bautista, Avicola del Oeste, Avesur, and Pollos Tenent highlighted that it is important to be close to the 'faconeros' (contract growers) not only for transportation reasons but also for technical ones. They indicated that the process of chicken fattening requires a lot of technical assistance in breeding, handling, feeding, and sanitary measures. Technicians believe that it is not possible for the company to be competitive without being close to the contract growers.

> *"...I truly believe that it would be unrealistic to run the productive part of the business if technicians are not within a reasonable distance from the farms. The production of chicken requires a lot of technical assistance. Sanitary issues must be closely monitored and this requires technicians being able to access the farms daily..."* (PI).

In order to explain the importance of location issues for this industry the interviewees from one company (Pollos Tenent) told the interviewer the story of a new entrant that attempted to settle his businesses in Salto (north of the country). This province has the benefits of cheaper labour but transportation costs coupled with price misinformation led this company to bankruptcy in less than ten months. The results have shown that all poultry companies supply Montevideo and its surroundings but only the three largest ones supply the rest of the country. Calpryca, Pollos Tenent, and Avicola del Oeste supply the rest of the country with warehouses located in strategic points close to the larger centres of consumption beyond Montevideo.

Respondents indicated that all competitors are located within a radius of 100 km. For some of the interviewees (Avicola del Remanso, Avicola San Bautista, Avicola del Oeste, and Avesur) having competitors close to their business is a consequence of transportation costs that oblige firms to settle their productive and processing activities close to Montevideo. Other interviewees (Calpryca and Pollos Tenent) agreed that transportation costs are the main reason for all competitors being settled in the same area, but they stated that keeping an eye on core competency is essential. They also believe that fair competition would be beneficial to the companies of the sector.

Three respondents considered that having the company's activities close to where the directors of the firms live was critical for the success of the business. One owner (Pollos Tenent) stated that:

> *"...at some point I had an abattoir located in Maldonado, roughly 180 km from the main area of production and the biggest market of consumption. I finally realised that I had to move the abattoir closer to Canelones. It is not feasible to run a poultry business in Uruguay if the owner (director) cannot be involved in day to day activities..."* (OI).

The opinions of the production manager of Avicola del Oeste, Avesur and Avicola San Bautista differ from the rest of the interviewees in the sense that they believe that it is not relevant for the success of the business to have the company close to where the directors live.

> "*...It is not relevant for the business to be located close to where the directors live. As long as the farms are reasonably close to the larger consumer markets and as long as there is somebody monitoring the prices there is no need for a director living close to the firm...*" (PI).

Collected data has shown that Uruguayan provinces do not offer special investment incentives to settle in businesses. About thirteen years ago under the government of the so called "white party", two provinces- Colonia and Maldonado- offered some incentives such as tax exemptions and credits. These incentives lasted for four years and disappeared when the new government took over. Poultry managers stated that their businesses had been settled long before these incentives came up and there were not any incentives in Canelones where all the poultry business are located. Therefore, they considered that incentives have not been an important factor for the development of their companies. Respondents also indicated that this situation contrasts with what happens in Argentina and Brazil where the industry enjoys different types of incentives.

> "*...Argentinian provinces' incentives include the elimination of taxes, special credits, and the elimination of the import capital goods tariff. Brazilian provinces offer incentives to agriculture companies such as, subsidized credits, in some cases the concession of the land to establish the company, and tax and tariff exemptions...*" (PI).

Interviewees from the government disagree to some extent with the assertions of the respondents from broiler companies. Even though they agree that there are not incentives for the province of Canelones the new government has created incentives for less developed provinces.

For this provinces, located in the North and less developed part of the country, the new government has developed a provincial promotion policy. However, these incentives are

only granted to those businesses that are considered as an investment of National interest. If an investment is considered of National interest then the province would offer the following incentives:

- Land granting for a period of 15 years with the possibility of an extension at the end of the agreement.
- There is a possibility to compete with other companies for accessing buildings that were abandoned, such as an agriculture market or an abattoir.
- It will be given exemptions on all provincial taxes. Therefore, the company will be exempted of paying taxes on property taxation, hygienic, electricity and water permits.

Even though the government has an incentive programme to help those businesses that are of National interest willing to locate in the less developed part of the country, there is no package of incentives to help the broiler industry, as it happens in Brazil or Argentina.

Infrastructure Resources

Infrastructure resources were considered an important factor condition by all interviewed companies. Respondents stated that the core resources for poultry businesses are water, electricity, and a good transportation network. Interviewed technicians emphasized that a good road network is critical for the success of the chicken production phase. Big trucks must reach poultry farms to deliver large amounts of grain and to pick up finished broilers. None of the interviewees considered it relevant for the business to be close to good local community and social facilities.

> "*...One of the relevant parts of our business is the production of chicken. Therefore, both our farms and the ones run by faconeros must have access to essential services. The business also requires a reasonable network of routes...*" (PI).

> "*....the government is fully aware of the importance that transportation networks have on the costs and efficiency of any national industry, for this reason the government has invested in the construction of a two-way motorway to facilitate the rapid access to Montevideo. This has proven extremely beneficial for all those national industries located in Canelones.*

This has been one the largest investments of the last decade and it that has had a positive impact on the development of agriculture industries... " (GI).

Demand Conditions

Secondary data has shown that over the last twenty years the consumption of chicken in Uruguay has been steadily increasing. However, there were years when economic impacts such as the crisis of 2002 negatively affected the entire industry. At those times the average consumption *per capita* stopped growing and even declined. Respondents indicated that after the crisis of 2002, consumption of chicken climbed quickly to its previous levels. Since 2004 there has been a big increase in kilograms consumed *per capita*. According to respondents from five firms (Avesur being the exception) this increase in chicken consumption is the consequence of favourable price relations between one kg of chicken meat and one kg of rump beef.

"*...After the well-known negative impacts of the regional crisis chicken consumption has steadily increased. The recover of the national economy along with a more competitive price of chicken against its competitors have boosted chicken consumption...*" (PI).

"*....poultry consumption in Uruguay, basically chicken consumption, has been roughly increasing at a rate of 1 kilogram per capita during the last ten years.... This sort of increase is unique in the Uruguayan market and neither of the other meat chains have been able to achieve such an increase over a continuous period of time...* " (GI).

Consumer Perception

Technicians of the six interviewed firms also added that the new trends towards healthier eating are slowly getting into the mind of the consumers. They mentioned that even though poultry firms have not yet carried out a campaign to enhance the demand for chicken meat, independent studies conducted in the Uruguayan market indicate that the consumer perceives chicken as a healthier meat than beef. Statistics from official reports indicate that in 2006 the *per capita* consumption of chicken in Uruguay is 17.5 kg and climbing. Two owner-directors (Avicola San Bautista, and Pollos Tenent) claimed that the official data is not correct and that they estimated an average consumption of 20 kg of chicken *per capita*.

> "*...I have noticed that in recent years, consumers have started to look for healthier food. In that scenario we have benefited from those consumers looking for healthier sources of protein...*" (OI).

Respondents forecasted a further increase in demand for chicken because beef consumption has been declining due to higher prices. Owner directors from four companies (Avesur being the exception) indicated that Uruguay has been taking advantage of its free foot and mouth disease status and exporting beef to new markets.

As exports are accounting for more and more percentage of beef production, there are fewer tons of beef to trade in the domestic market. Consequently, the price of beef has increased and some consumers have moved demand from beef to chicken.

The idea that beef exports have indirectly benefited the broiler industry is also shared by interviewees from the government. For instance, one interviewee from The Chamber of Commerce and Exports of Agricultural Products and Agro industrial Products stated that:

> "*...an indirect market opportunity for the industry could be prompted by higher levels of beef exportations which cause a reduction of the domestic offer and higher prices of beef meat...*" (GI).

> "*...Chicken consumption has been benefited by a tendency to eat healthier and favourable price relations against its meat competitors. In spite of an increase of chicken consumption, beef is still the most consumed meat for Uruguayans...*" (PI).

Three technicians (Pollos Tenent, Avicola del Remanso, and Avicola del Oeste) stated that during the forties the Uruguayan poultry industry used hormones to accelerate the fattening of chickens. Despite the fact that the industry has not used hormones for more than 50 years there are still some consumers that remain concerned about the use of hormones in chicken feed. Technicians from the mentioned firms believe that if the industry could manage to change that perception the consumption of chicken would increase even more.

Export Markets

The view of all owner-directors (with one exception) is that the costs of production prevent the Uruguayan poultry industry from competing with international prices. Respondents mentioned that when Uruguay was present in international markets it was because of some economic policy that used different packages of incentives to foster the exports to that country.

> "*...The reality indicates that what Uruguayan poultry companies export is insignificant compared to what is traded domestically. However, I believe that exports would benefit the entire industry to become more competitive...*" (OI).

Interviewees indicated that the major chicken export markets had been Venezuela, Angola, Haiti, and Congo. Interviewees from one firm (Calpryca) stated that their company was one of the two firms that benefited from those incentives to export. The owner of the company stated that in spite of the low return of the activity it helped to boost the production at the poultry farms. He also indicated that the other company that benefited from incentives to export was Pollos Moro but it went bankrupt seven years ago. Technicians indicated that since Uruguay's economy relies mainly on agriculture products it was unfeasible to sustain those policies. In fact these policies lasted for only a very short period of time.

Results have shown that at the moment only Pollos Tenent exports chicken. Uruguay is a bird-flu free country and Pollos Tenent is exploiting this condition to sell to a niche market ready to pay more. However, the owner and middle manager stated that even in this premium market Pollos Tenent is making small profits. The firm still decided to export in order to increase the production and capture the benefits from the economies of scale.

> "*...Even though the margin Pollos Tenent is making in foreign markets is small I believe that it is an opportunity to make other markets to know about the excellent health status of the Uruguayan poultry industry...*" (OI).

At the same time government sources (Chamber of Industries of Uruguay and Ministry of Agriculture) believe that Uruguayan broiler companies should take advantage of its health status to gain international markets.

"....is true that Uruguayan poultry firms do not have a competitive price to enter foreign markets that Brazilian companies can easily access thanks to their economies of scale. However, it is also true that Uruguay has an excellent reputation in terms of heath status that would facilitate the entry to countries demanding high quality meat. At the same time these markets might also be willing to pay a higher price for high quality products or added-value products such as chicken ready meals...Although Uruguayan companies have not yet developed this niche market, both factors could represent a future opportunity that should not be overlooked by the firms..." (GI).

Key Customers

All respondents stated that the largest customers are the supermarkets located in Montevideo, Canelones, a few in the rest of the country, and Punta del Este (the biggest resort) during the summer. Every interviewee highlighted the power gained by supermarkets since the beginning of the nineties. Because of this, the interviewees stressed the importance of building good and long relationships with supermarkets. With marginal differences among interviewed firms, supermarkets account for 70% of the businesses, small retailers 15%, poultry shops 10%, and restaurants 5%. Two companies (Calpryca and Pollos Tenent) which have developed their own chain of poultry outlets.

"...Since 10 years ago supermarkets have gained more power and nowadays it would be impossible to remain feasible without gaining a space on their shelves. Even though some companies are trying to increase their businesses by having their own outlets the majority of sales are controlled by supermarkets..." (PI).

"...the investment of international supermarkets in Uruguay is in line with the current government policy which aims to integrate the economy of the country into the globalized world. The government has made big efforts to attract foreign direct investment. We believe that this policy would bring dynamism to the country and it will help the domestic labour force to gain

up to date skills...The opening up of the economy has impacted some businesses but overall the results have been positive..." (GI).

Consumer's Preferences

Several respondents stated that Uruguayan consumers have a preference for a large fresh chicken with a retail weight of about 2.8 kg.

"...on average Uruguayan consumers' prefer a larger chicken than the one consumed in Brazil or Argentina...the ideal size of the whole chicken would be accompanied by the right chicken colour skin which should be yellow..." (GI).

The results have shown, that contrary to its MERCOSUR neighbours, Uruguayan consumers do not eat frozen chicken. Apart from this general feature, the main requirements of Uruguayan buyers are price and freshness. The owner-director of Pollos Tenent indicated that recently, following health trends, some customers have started to request a low fat "skinny chicken". Qualitative data has shown that none of the firms have conducted market research to detect new needs of customers. It is the view of the interviewed technicians from Avesur, Avicola San Bautista, and Avicola del Oeste that poultry firms do not invest in market research because to some extent they have a captive market.

"...I have worked all my life in the Uruguayan poultry industry and I believe that Uruguayan firms do not invest in market research because unlike Argentinian or Brazilian firms they enjoy the benefit of a protected market..." (PI).

Respondents agreed that the supermarket is the link in the chain that detects the trends in the market and passes that information to the firms. The power of supermarkets allows them to put a lot of pressure on the poultry chain. The owners of the firms indicated that all supermarkets with the exception of one (Tienda Inglesa) are putting pressure on prices. Tienda Inglesa put more emphasis on freshness, quality, and delivery times over price. Tienda Inglesa is a supermarket developed to fulfil the needs of the Uruguayan upper class. Respondents emphasized that price is the main factor supermarkets use to select their

suppliers. However, they mentioned that there are minimum standards of quality that must be met by all poultry firms.

> *"...Over the last few years I have witnessed how the development of supermarkets in Uruguay has diminished our power of negotiation. While in the past there were plenty of outlets to place our products now I have to ensure that my standards of production are in line with supermarkets requirements to remain competitive..."* (OI).

> *"....it cannot be denied that the concentration of power among a few big supermarket chains has generated a power-dependence relationship which has reduced enormously the negotiation power of most poultry producers. Supermarket chains use their bargaining power to obtain lower prices that oblige the producer to squeeze their margins if they want to gain distribution, and maintain their brand presence within the market... However, we believe that this has helped to improve the efficiency of agriculture business firms and the consumer has benefited from accessing to better deals..."* (GI).

Qualitative data indicated that the main strategy selected by the majority of poultry firms to attract more customers is becoming more competitive in price. However, Calpryca, Avicola del Oeste and Pollos Tenent (controlling 61% of the market) stated that they are also putting efforts to improve the quality and delivery times.

Domestic Rivalry

Numerous owners and managers of interviewed firms stressed that competition among incumbent firms is strong and fierce. This strong competition is primarily expressed in the form of price and secondarily through quality. Among all the firms of the industry only two of them (Calpryca and Avicola del Oeste) invest in advertising. Both companies focus their advertising campaigns on the quality of their chickens. They also emphasise the quality of the food that is used to fatten their birds.

Forms of Competition

The managers of Avicola San Bautista, Avicola del Remanso, Avicola del Oeste, and Pollos Tenent maintain that 'disloyal' competition among incumbent firms has prevented a major development of the industry. There are regular meetings attended by representatives of all poultry firms. The objective of these meetings is to come to an agreement about different topics that are of concern for all firms. Price competition is the main topic being discussed in every meeting. Respondents indicated that many agreements are achieved during these meetings. For instance, representatives of all firms may agree to trade at a minimum price per kilo. However, the results have shown that only on very rare occasions these agreements are respected. All managers believe that this 'disloyal' behaviour is result of the idiosyncrasies of Uruguayan poultry owners. This type of behaviour, almost forming a cartel to agree on price, would be illegal in many countries such as UK or US. In theory, agreements on price- among competitors belonging to the same industry- are illegal in Uruguay. However, the government has not had any evidence to prove this sort of conduct.

> *"...it is very difficult to prove with facts that firms within the same industry have created a price agreement for a specific product...If we lack written proof and if it is just for a short period of time such as a promotional period it becomes very difficult to prove. It would also be illegal to accuse a firm without any written proof of that agreement. It is possible that few competitive firms may have verbal discussions to agree a certain price range for a certain period but we cannot assure that this has happened and that this verbal agreement rules the market price..."* (GI).

> *"...My view is that poultry is one of the most competitive industries in Uruguay. Many examples of fierce competition can be found along this industries' history. Most of the competence among the incumbent companies is expressed in the form of price. In fact, price wars are the common token within this sector..."* (PI).

Three of the interviewed owners (Calpryca, Pollos Tenent, and Avicola del Oeste) indicated that they have been trying to differentiate their products in order to avoid only price competition. Focusing on quality they have tried to be recognized as companies that offer a better product. For instance, they allocate the giblets in a separate bag because these

are the parts of the chicken that become rotten more quickly. This simple technique maintains the best quality of the chicken for three more days. Although these firms are trying to improve the quality of their products the respondents emphasized that in the present market the biggest concern is still the price.

> "*...My company wants to be able to be differentiated emphasising the quality of our products, however, we have to be very cautious about any price increase of our products because most supermarkets currently select suppliers solely on price basis...*" (OI).

Competition with Foreign Firms and Substitute Products

The results have shown that there is a great concern among all interviewees about the entrance of new competitors. Interviewed technicians maintain that different actions have been taken by incumbent firms to discourage local or international potential entrants.

> "*...During my time working for Uruguayan poultry firms I have witnessed all kinds of measures to deter domestic or international potential entrants...*" (PI).

Three technicians (Avicola del Oeste, Avesur, and Calpryca) mentioned the case of an Argentinian poultry firm (Cresta Roja) that tried to enter the market through the acquisition of a small Uruguayan poultry firm that was facing financial constraints. After one year, Cresta Roja decided to leave the Uruguayan market due to different kind of measures taken by incumbent firms to make its businesses less profitable. For instance, Cresta Roja aimed to import grain from Argentina but the incumbent Uruguayan firms lobbied the government preventing the Argentinian firm from importing grain. The owner-director of Pollos Tenent mentioned that Cresta Roja had no choice but buy in the domestic market, where all grain suppliers were tied to the domestic firms.

A few months ago a new Argentinian poultry firm (Tres Arroyos) expressed its wish to open a branch in the Uruguayan market. All interviewees are very worried because Tres Arroyos is one of the top poultry companies in Argentina and would be very difficult for incumbent companies to deter it from entering the market. Tres Arroyos is a company that

has developed the know-how to succeed in the international arena. Even though Tres Arroyos has not started to operate in Uruguay it is in the stage of incubating reproducers.

> *"...During my professional career I have had the chance to work for a few years at an Argentinian poultry company. From that experience I learnt that a lot has to be done if Uruguayan firms aim to remain competitive against Argentinian top producers such as Tres Arroyos. Even though owners of Uruguayan poultry firms are concerned about the risk posed by this Argentinian company, they have not started to do the necessary adjustments to be prepared to compete with producers of bigger scale..."* (PI).

> *"...The new government is willing to help those foreign companies aiming to invest in Uruguay. Those companies that show a long investment commitment and can create new sources of work will be granted, during the start up phase, tax exemptions. So far, this government has successfully helped big companies such as Botnia (Forest Industry Company) to open a branch in the south west of Uruguay..." (GI).*

In spite of the great concern for the entry of new competitors, many interviewees pointed out that there are no concerns about the threat of substitute products displacing chicken meat. According to them, other meat products have not reached the grade of development of the chicken food chain and they do not represent a threat to the industry. Quantitative data indicates that at the moment the price of both, pork meat and fish meat is much more expensive than chicken meat. Respondents indicated that the main competitor of chicken is beef for barbecues that is specifically cut and called 'asado' (a traditional cheap cut of beef). However, export market expansion for beef has resulted in an increase of prices for all beef cuts in the domestic market.

Firm Strategy

Qualitative data has shown that there are big disparities in the level of education among firm's personnel and between the level of education of technicians and owners. Owners of poultry firms were originally small farmers with low incomes, and because of that they did not have the chance to go to university. Generally, owners have poor education but a lot of experience, mainly in broiler chicken production. Since their businesses started about 20

years ago they are still the ones running the firms. This situation is different for Calpryca and Pollos Tenent. These two firms started their businesses in the early seventies, many years before the rest of the firms. The founders of Calpryca and Pollos Tenent belonged to the middle class and had the chance to send their descendants to the University.

> "...*Calpryca is now run by the next generation of owners. In fact there are no directors from the original founders of the company. This new generation has better education than their parents. There are lawyers, accountants, and production engineers...*"(OI).

Technicians of all companies hold a university degree, most of them being agronomists and veterinaries. All interviewed technicians stated that during their studies they received training on animal health and production but they did not receive any management training. They also stated that the owners of the poultry firms requested them to carry out tasks that are not in line with their technical background. Many of them have managerial responsibilities along with technical responsibilities. Among the interviewed technicians, only one middle manager from Calpryca holds a diploma in marketing. In spite of technicians having managerial responsibilities, they do not have much influence on the strategic decisions of the firms, which are taken by the owners. Managers from Avicola del Oeste, Avesur, and Avicola San Bautista expressed their frustration at not being involved in the strategic decisions of the firm. Owners of Calpryca and Pollos Tenent were the only ones that indicated that they considered the opinion of the junior managers before taking strategic decisions.

> "...*It is frustrating working for a company which delegates a lot of responsibility to you but at the same time it does not give you any chance to have a say on the strategic decisions of the business...*" (PI).

Selected Strategies

The results indicate that the emphasis on the firm's strategy differs between firms. There are two different strategies that divide the poultry companies in two groups. The first group consisting of Avicola San Bautista, Avesur, and Avicola del Remanso are pursuing a cost leadership strategy.

> *"...At the moment the emphasis on the firm's strategy is put on price. Our aim is to become more competitive in price. The better the price the better the chances to improve market share. Even though price is our main concern the company does not overlook quality standards..."* (OI).

The other group integrated by Calpryca, Pollos Tenent, and Avicola del Oeste want to differentiate their products through quality, new products, and chicken ready meals. Even though interviewees from the latter group claimed that quality is where all efforts will be put, at the moment price is still the main concern of the business.

Veterinaries from Avesur, Avicola San Bautista, Avicola del remanso, and Avicola del Oeste suggested that if the Argentinian firm (Tres Arroyos) started to operate in the market, all Uruguayan firms would be forced to improve quality.

> *"...Tres Arroyos has better chicken slaughter technology than any Uruguayan poultry firm, it supplies a more demanding market, and it is used to competing in an open market free of barriers. Both the quality and competitive price of the Argentinian chicken markethas permitted Argentinian poultry firms to increase exports by 10% per year..."* (PI).

Most technicians indicated that the lack of competition with foreign companies has permitted some Uruguayan firms to sell chicken in conditions that would be unacceptable in other markets. According to them, it is common to find in most Uruguayan supermarkets chickens with wing feathers or with haemorrhages. Specialized machines would prevent this from happening.

The above opinion is not shared by government sources. For instance, one interviewee from the Ministry of Agriculture, stated that the quality of chickens have improved a lot.

> *"... I believe that the Uruguayan consumer has benefited from the investment of international supermarkets. These powerful groups have started to impose their rules. They place more importance on quality issues and the consumer has started to perceive the improvements on the presentation of chicken meat..."* (GI).

Manager's Motivations

The majority of owners stated that their primary objective was to gain market share in the local market in order to become the market leader. Only Pollos Tenent included as a secondary objective increasing the company's export sales through conquering new niche markets abroad that would allow them to boost production, as well as harvesting the benefits of economies of scale.

When asked about the importance of the company's reputation in gaining market share, many interviewees stressed that reputation does not play a relevant role because neither supermarkets nor small retailers look at reputation to select a firm. Most supermarkets select their suppliers mainly on the basis of price: they look for economic benefits.

> "*...At the moment of gaining market share there are other factors more important than reputation. Neither supermarkets nor consumers make purchases on the basis of reputation. Both of them prioritize price and freshness. If one company does not meet supermarket expectations its position is taken by other company...*" (PI).

Owners of the firms claimed that supermarkets are using their power to force them to offer sales promotions. According to their view, these sales promotions have decreased the profit margins of poultry firms in favour of supermarkets. Most supermarkets put in second place quality issues and delivery times. Respondents indicated that Tienda Inglesa is the only supermarket that selects its suppliers on the basis of quality and delivery times rather than price.

Again, the above statement is not shared by government interviewees who claim that the increased power of international supermarkets have brought benefits to the consumers both in terms of quality and price.

Work Relationships

Owners and technicians have a different opinion in relation to the attitudes of workers of the company toward management and vice versa. The majority of owners claimed that there is a very good relationship between them and their employees. They emphasized that this good relationship is based on respect.

"...Since I founded this company I have tried to develop good relations among all levels of human resources. Because of that I believe that I managed to create an atmosphere of respect and support..." (OI).

However, technicians (including middle and junior managers) of the same companies (Pollos Tenent being the exception) had a different point of view. They agreed that work relations between managers and owners are good, but it is not the same between low income employees and owners. Low income employees are those that work in the farms, abattoirs, distribution chains, and doing basic administrative tasks. Their salaries are very low, creating some friction between them and the owners.

> "*...Firm's owners see their low income employees as an asset to make money. Moreover, they do not provide low income employees even with minimum working conditions...*"(PI).

At the time of the interviews (March – April 2007) Avesur had its abattoir occupied by its employees, and Avicola del Oeste was trying to resolve some employee conflicts. In Pollos Tenent the owners have a different view and consider their employees very important for the success of the company. In Pollos Tenent there are very good work relations among all employees of the firm. Technicians of two companies (Avicola San Bautista and Avicola del Remanso) stated that two years ago the contract growers (faconeros) created a union to improve their power of negotiation against poultry firms. Every year faconeros and poultry firms have to agree the price paid per kg. Since the creation of the union, the time to negotiate the price has become a particular moment of tension between the two interested parties.

The opinion of a government interviewee supports the view of those technicians who stated that relations between owner-directors and low income employees are not as satisfying as owner-directors claim. This government interviewee has acted as a mediator in several conflicts between owner-directors and contract growers.

Employment Strategy

Interviewed owners stated that none of the firms have an employment strategy. They claimed that there is not much sense in having a strategy when the reality indicates that there are not enough qualified personnel to hire in the domestic market. Respondents mentioned that during the seventies there was an education centre which prepared people to work in the poultry industry. However, these courses have not been available for about 20 years.

> *"... It is very difficult to find people with the skills to work in the poultry industry. Therefore, when there is a vacancy we try to find the person that best suits the requirements of the job..."* (OI).

The owners of most firms stated that there are no incentives for their employees. Those working in the business department have sales commissions, but these commissions form part of the salary package. Quantitative data indicates that if employees do not meet sales targets their salary would be very low.

Related and Supporting Industries

The results have shown that the Uruguayan poultry industry has many suppliers which provide it with different agricultural inputs such as grains, poultry medicines, machinery, fertilizers, and so on.

> *"....poultry industry is related to many other industries along the production chain and it is an important consumer of grains, wood, and other industrial products. In this way, the development of the poultry industry contributes to the development of other industries such as maize, sorghum, fertilizers, poultry medicines and so on..."* (GI).

> *"....the main domestic supporting industry of the Uruguayan broiler industry is the grain industry. The production of chicken meat consumes most of the maize, sorghum, and sunflower produced in Uruguay..."* (GI).

Working Relationships between Suppliers and Firms

Several interviewees stated that suppliers are selected on the basis of price and quality. Interviewed owners claimed that they demand from suppliers the same things that their customers demand of them. Due to the importance of the quality of poultry medicines (vaccines, vitamins, virucidals, etc) all firms have tried to develop long term and trusting working relationships with poultry medicine suppliers. However, the same principle has not been applied to the rest of the agriculture inputs where firms give priority to economic benefits over developing long term relations.

> "*...In general we demand from our supplier's price and quality. With the exception of some inputs that play a crucial role in the production of chicken, price is the most important factor at the moment of selecting a supplier...* (OI).

All respondents indicated that their firms operate with local suppliers located in the capital and across the south provinces of the country where crops utilized to feed the poultry industry are grown. Three firms (Avicola del Oeste, Pollos Tenent, and Calpryca) also operate with foreign suppliers. These three firms buy from foreign supplier's poultry medicine, machinery (poultry feeders, drinkers, and mills), and technology packages for poultry. However, all firms emphasized that the majority of transactions were carried out with local suppliers which do not serve foreign markets.

> "*...Most transactions of our company are carried out with local suppliers that do not export. In rare occasions the company has purchased from international supplier's poultry medicines...*" (OI).

Most interviewees (Calpryca and Avicola del Oeste being the exception) pointed out that apart from suppliers of agriculture inputs there are no related companies on which the firms' depend. Calpryca and Avicola del Oeste work with advertising companies which are all located in Montevideo. Both companies argued that advertising campaigns have helped to boost sales but they are not a key issue for the businesses.

Two interviewed technicians from Pollos Tenent and Avicola del Oeste claimed that at the moment there is no government or academic institution (either private or public) that

conducts research on poultry. Interviewees from all firms mentioned that Uruguayan poultry firms do not have specific relationships with government agencies or universities. Although general information for the agriculture sector can be accessed from government offices there is no government funding to support more specific research that would develop new knowledge for the poultry sector.

Government interviewees explained why there is no government funding for poultry research. However, they stated that poultry information can be accessed through two government organizations.

> *"...government offices such as OPYPA (Office of Programming and Agricultural Policies), provide information on incubation production for the sector on a monthly basis and the Ministry of Agriculture provides information on general topics related to the poultry industry..."* (GI).

After conducting an investigation into the Uruguayan poultry industry, the opinion of the researcher is that the available data on poultry in Uruguay is very poor. There are some reports related to broiler and egg production, but the material is not easy to access.

When asked about the financial support available for the poultry sector, all interviewees agreed that there is no financial support either from private or government institutions.

> *"...The poultry sector has not received any financial support from the Uruguayan government. While some agriculture sectors in Uruguay are granted soft credits from the National Bank there is not any facility for poultry entrepreneurs that want to borrow money to invest in their businesses..."* (OI).

Although the lack of financial support to the industry cannot be denied, government representatives stated that the industry is being supported by the government through the implementation of tax controls that will secure a much fairer competition.

"...one way the government has supported the poultry industry was through the allocation of resources to implement a tougher policy against tax evaders. I believe this has proven to be an effective action that has contributed to the development of the industry. This has been one of the most important supports that the government has provided to the industry to tackle pricing issues and to protect the margins of honest poultry producers..." (GI).

Government Policy

Government Grants

The results have shown that none of interviewed firms received from the Uruguayan government grants or benefits that might have helped the success of the firms. Many interviewed owners mentioned that the development of their firms was done with their own resources.

"...I can tell you that since our family company was established in 1973 we have not received from the Uruguayan government any kind of help..." (OI).

Two of the interviewed owners (Pollos Tenent and Avicola del Oeste) mentioned that a few years ago those firms that exported chicken benefited from a tax regime called "temporary admission". Temporary Admission is defined as the operation which allows importers to introduce certain goods (raw materials, parts and components, engines, packing material, etc.) into the country free from import duties by ensuring they are transformed and re-exported or subject to an industrial process in the country and incorporated in export products. Respondents indicated that during the time of "temporary admission" export poultry firm's harvested tax benefits from the government. However, they emphasized that these benefits belonged to an incentive package developed by the Uruguayan government to boost the exports of the country. Therefore, respondents' views on this topic are that these were general industry benefits which were not developed for the poultry industry in particular.

Government representatives believe that the decision to maintain the 'sanitary barrier' in place has largely contributed to the development of the broiler industry. It was the government which negotiated this protection barrier with MERCOSUR countries to give the Uruguayan poultry industry enough time to adapt to the upcoming new market conditions.

> *"...it's true that there is no financial support from the government but it is unfair to say that they government has not supported the poultry industry in other ways. For instance, within the context of MERCOSUR, the government has maintained the 'sanitary barrier' with Argentina and Brazil. The reason behind this policy is purely to protect the Uruguayan poultry industry that without adjustments lacks the capacity to compete against much efficient producers from Brazil and Argentina...This measure has benefited Uruguayan companies, which have been able to obtain higher margins than the rest of MERCOSUR broiler companies..."* (GI).

Government Business and Technical Advice

The majority of interviewees stated that the government has not played any role in giving business or technical advice when it was needed. Interviewees highlighted that there are no government bodies running programmes to disseminate cutting edge technology related to the poultry industry. Interviewed technicians mentioned that the only information supplied by the government is the price of poultry products sold in the domestic market. Some owners indicated that they have utilized private sector sources of advice to address the challenges of the business.

> *"...Over my 28 years of experience within the poultry sector I have never seen any government programme to disseminate cutting edge technology. Moreover, there is not any department at the Ministry of Agriculture where poultry companies could address enquiries related to business or technical aspects ..."* (PI).

Two interviewed technicians (both of about 60 years old) from Calpryca and Pollos Tenent mentioned that 31 years ago there was a laboratory (Rubino) belonging to the Ministry of

Agriculture which used to give advice on avian pathology. However, since that time the government has no longer given advice to the sector.

> "*...On rare occasions workshops have been conducted at the Veterinary University. These workshops are, designed for academic attendees, they are not properly promoted, and they are quite expensive. Therefore, almost no one from the poultry firms has attended any of these workshops...*" (PI).

The Government however argues that many workshops have been conducted. Technicians indicated that Uruguay has, as do many developing countries, a social system characterized by strong differences among its social classes. While in the past Uruguay was recognized for having an influential middle class, in recent years a new social structure has emerged with a diminishing middle class, and increasing differences between the upper and lower class. In this new context, interviewees believe that the government strategy guarantees that only the upper class can attend these workshops.

Tax Measures

Four respondents (Calpryca, Pollos Tenent, Avicola del Oeste, and Avesur) noted the measures recently taken by the government to end clandestine slaughter as well as tax evasion. These respondents maintain that with these measures, competition is going to be fairer between incumbent firms, as all companies will be forced to compete under equal conditions.

> "*...I would like to remark that the decision of tackling clandestine slaughter and tax evaders it was the most sensible act that I have witnessed from the current government...*" (OI).

According to all interviewees, government policy historically seems to have had a neutral influence on the development of the poultry industry. However, interviewees from four firms (Avicola San Bautista and Avicola del Remanso being the exception) mentioned that since a year ago the Ministry of Agriculture has been trying to act as a mediator between the faconeros (contract growers) and the firms. The idea of the government commission being in charge of this negotiation is for it to come out with a table of values showing the amount to be paid by the firms for the services given by the faconeros. Respondents stated

that it is important for all firms to pay the same money to their faconeros. This would avoid the possibility of a firm exploiting the faconeros to improve its competitiveness against the rest of the firms. The influence the Uruguayan government has on the price that faconeros receive from the firms would be unusual from a British perspective. In the UK the price to be paid for the service of the faconeros would be decided by the market and the government would not influence it. However, some strong firms in Uruguay have taken advantage of their negotiating power and the high rate of unemployment to pay captive labour (faconeros) a salary lower than the minimum wage guaranteed by law. This is why government intervention is needed.

Three of the interviewees (Avesur, Pollos Tenent, and Avicola del Oeste) claimed that the government should at least enact regulations to protect the excellent health states of the Uruguayan chicken industry. Interviewees from the three firms agreed that the government should take the necessary measures to keep the country free of bird flu and free of Newcastle disease. The Uruguayan government created a commission with the objective to address these issues. However, since its formation five years ago not even one decree has been enacted. The view of the people working in the targeted firms is that the employees working in this commission are not qualified enough to fulfil the assigned tasks.

> "*...The Uruguayan government should take the necessary measures to maintain the excellent health status of the poultry industry. The government should take more responsibility in controlling the illegal importation of chicken from Brazil...*" (OI).

Government interviewees highlighted that it was the government initiative to negotiate a tariff protection for the Uruguayan broiler industry. They also stated that Uruguayan poultry companies are among the very few that still enjoy the benefits of a protected environment. The government is committed to protect the health status of the poultry industry by taking all the necessary measures. However, if Brazil or Argentina companies can prove scientifically that they have obtained the same type of health status that the Uruguayan broiler industry claims, then there would be no reason for the Uruguayan government to sustain the sanitary barrier.

Chance Events

For Pollos Tenent, bird flu freedom was an important factor that gave the company a chance to export to new markets. Interviewees from this company claimed that in spite of having small margins, exports have helped to increase the sales and to benefit from economies of scale. Avesur and Avicola San Bautista, on the other hand, claimed that Uruguayan firms could not take advantage of its free bird flu status because of a perceived lack of competitiveness.

The rest of the interviewees stated that the most significant chance event that has had a significant impact on the progress of their companies was the declaration of Uruguay as a country free of foot and mouth disease in 1995. Since then, the Uruguayan beef industry has expanded its exports. As a consequence of this export expansion, the price of beef in the domestic market has increased. Qualitative data has shown that the poultry industry has benefited from the increase in price of its main competitor as some consumers have moved from beef to poultry looking for a cheaper source of meat.

> "*...It can be denied that the increase of beef exports has boosted poultry consumption. As more attractive markets have been conquered for beef, the domestic price of beef has increased against poultry. We have capitalized those consumers looking for cheaper sources of meat...*" (PI).

Final Comments

The majority of the owners of interviewed firms used this part of the interview to highlight the fact that in Brazil and Argentina the poultry industry has benefited from different measures of support, while the Uruguayan industry has developed without any kind of government support. They also agreed with the idea that Uruguay should emphasise its health states and exploit it.

> "*...The possible competitors from MERCOSUR receive different types of support from their respective governments. Therefore, as a poultry entrepreneur belonging to the smallest MERCOSUR's country, I expect the Uruguayan government to provide poultry firms with at least the same support received by Argentinian and Brazilian poultry firms...*" (OI).

A government interviewee stated that the Uruguayan government lack the resources to provide Uruguayan broiler companies with the same support that their counterparts from Brazil and Argentina receive from its governments.

> "*...I believe that Uruguayan broiler entrepreneurs have to understand the reality of the country. It would be unrealistic to think that the Uruguayan government could offer their industries the same support that Brazil the biggest economy of MERCOSUR provides to its domestic industries. It has also to be understood the role that the broiler industry plays for the Uruguayan economy. The government is aware of the relevance that the poultry industry has for the Uruguayan economy. However, in terms of GDP it still lies behind other agriculture industries that are the priority such as beef, crops, dairy and wool...*" (GI).

Several interviewed technicians (Avicola San Bautista being the exception) indicated that according to them the main weakness of the Uruguayan poultry industry is the lack of professionalism of some of the owner-directors. They emphasized that in contrast to Argentinian and Brazilian managers, some Uruguayan managers are not qualified because they have not received training in management, and they lack an entrepreneur's vision.

Analysis of the factors responsible for the development of the Uruguayan poultry industry now follows in chapter 9. It examines and assess whether Porter's framework is able to explain the success of Uruguayan poultry firms.

Chapter 9

Discussion

This chapter critically analyses the main findings derived from the in depth interviews carried out with key decision-makers from the Uruguayan broiler industry. The discussion provides a critical understanding of those factors that have contributed to the success of the Uruguayan broiler industry based on the assessment of the six interviewed firms and collected data from interviews with government employees. The different arguments of Porter's (1990) diamond framework are confronted with qualitative data from the industry under study. This will form the basis for the development of an adaptation model presented in the last chapter that addresses the shortcomings of Porter's framework.

Does Porter's (1990) Theory of Competitive Advantage Work in an Uruguayan Context?

A critical review of the relevant theories and models on international trade was presented in chapter 2. From that review, it was concluded that Porter's (1990) theoretical framework seemed to be the most appropriate for explaining and understanding the success of the Uruguayan broiler industry over the last 44 years.

In applying Porter's (1990) (hereafter, simply Porter or Porter's) framework to six companies from the Uruguayan broiler industry the research findings discussed below demonstrate that the model needs to be slightly adapted to take into account the particularities of the industry under study. From the qualitative analysis, the main components of Porter's 'diamond' that are applicable to Uruguayan broiler firms are: factor conditions; demand conditions; firm strategy, structure, and rivalry; and related and supporting industries. On the one hand, the role played by government policy was overrated by Porter's model in this sector, but on the other hand, the role played by chance was underrated by the model. In spite of needing some adaptations, the model is capable of explaining the success of the Uruguayan broiler industry. This chapter will now discuss in detail the applicability of each component of Porter's 'diamond' to the Uruguayan broiler industry.

Factor Conditions

Generally, Uruguayan broiler firms seem to support the 'factor conditions' component of Porter's model based on the evidence from the targeted companies and people involved with the industry. However, qualitative analysis indicated that not all Porter's hypotheses are associated with competitiveness in the industry under study.

The analysis of the collected data revealed those factor conditions that played a relevant role in the development and success of all broiler firms targeted by this study. For example, infrastructure resources (including water, electricity, and transportation network) were identified as being critical for the development and success of broiler firms in their start-up phase. Good quality water is essential for efficient broiler production. When the levels of some nutrients in water are out of balance this may impact on poultry performance. Without electricity it would be impossible for a contract grower to produce efficiently. A good transportation network is essential for the ration and baby chickens to be delivered at the farms and for chickens to be collected when they reach the slaughter weight. The current government is aware of the key role that a transportation network plays in the development of agricultural industries in general. This is in line with what Porter's theory suggests. There are some essential factor conditions that need to be available for an industry to develop.

Recent domestic economic developments had no association with Uruguayan broiler firms' progress. Many interviewees emphasized that the development of the industry over the last ten years was a result of individual firm efforts. The government view recognizes that there are not enough resources to be allocated to industries such as poultry, which is not a corner stone of the Uruguayan economy. Even though the country provides firms with the required infrastructure during the start-up phase, it seemed that the port structure constrains the progress of broiler firms. At the moment Uruguayan broiler firms have to rely on domestic crops because the port is not deep enough to accommodate big ships. In a scenario of a MERCOSUR operating without barriers, the competitiveness of the Uruguayan broiler industry may be undermined if domestic companies cannot access to cheaper inputs. It has to be noted that the main cost of broiler production is the ration and Uruguayan broiler companies are surrounded by two of the most efficient world producers (Brazil and Argentina) who have access to very cheap crops.

Porter states that generalized factors are not enough for creating competitive advantage in industries, but they serve as a supporting structure from which factors of competitiveness are created. A country-based analysis would not support Porter's claim, as the Uruguayan broiler industry has successfully developed in spite of generalized factor constraints such as the port structure. However, when analysed on a regional basis Porter's claim remains valid, if the success of the Uruguayan broiler industry is assessed against its counter parts from Brazil and Argentina.

Qualitative data suggests that some location issues are very important for the success of Uruguayan broiler firms' activities, while others do not seem to play a major role. Being close to contract growers and the largest market of consumption (Montevideo) appeared to be determinants of success in all interviewed firms. The competition among companies is fierce and prices may change overnight. Montevideo is the capital where half of the population lives. Those companies that have tried to settle their business far from the largest and most affluent market of consumption went bankrupt after few months. It seems very difficult to remain competitive without being immersed in a dynamic market where prices are constantly changing.

Due to the impact of transportation costs, having the firm's abattoir and feed mills close to contract growers also appeared to be associated with a firm's success. Interviewees from four firms suggested that having their businesses close to competitors was the consequence of transportation and logistic reasons. It is important to highlight the main characteristics of the Uruguayan market. It is small, it is underdeveloped, with a small number of affluent people, and where price is a critical issue. Cost efficiency is vital for the survival of any company in this industry. Transportation costs are the second cost after rations and need to be closely monitored. Interviewees of two firms (Calpryca and Pollos Tenent) considered that being close to their competitors is essential to foster the development of their businesses. Porter (1990) maintains that geographic industry concentration spurs competitiveness by magnifying the interactions between the components of the diamond. He also claims that a high level of geographic concentration spurs efficiencies, specialization, improvement, and innovation. Even though the study material indicated that only interviewees from two companies were aware of the impact that geographic concentration has had on the competitiveness of the industry, the researcher's view is that the findings of this research clearly support Porter's hypothesis. In fact, all companies that

tried to settle their businesses far from the area of concentration went bankrupt after few months.

The availability of local human resources (technicians) was a factor condition that contributed to the success of firms during the start-up phase of the business. Technicians play a relevant role in maximizing the health, welfare, and productivity of the birds. Nevertheless, changes in the University degree programme, with poultry not being a core module any more, have made it very difficult for firms to find new technicians with the required skills to take over the positions of those technicians who are reaching retirement age. Therefore, the lack of skilled labour has been identified as a factor that has started to constrain and will largely limit the future development of broiler firms. The lack of skilled technicians should be of major concern. One of the strengths of the Uruguayan broiler industry relies on its excellent health status. In order to maintain this condition, technicians with the required skills are necessary to manage and monitor bird's health. These findings support Porter's hypothesis that in order to achieve competitiveness, firms must have access to appropriate human resources. Since the inception of the industry, the Uruguayan market has been able to provide specialized professionals who have played an important role in the development and success of the industry.

Qualitative analysis also indicated that the lack of managerial skills and professionalism of some domestic poultry owner-directors will compromise the competitiveness of the industry against more efficient companies from Brazil and Argentina. Most key decision-makers were originally farmers with very limited formal education. In a developing country such as Uruguay most small farmers struggle to cope with the cost of living and education is a luxury they cannot afford. Even though they vertically integrated their businesses and became successful entrepreneurs, this has only been achieved in the comfort of a protected environment. On the other hand, Brazilian and Argentinean broiler entrepreneurs have developed the skills to successfully compete with the best broiler firms worldwide. It is the view of the researcher that the current key decision-makers of Uruguayan broiler firms do not have the required management skills to compete with international firms from Brazil and Argentina. These findings support Porter's hypothesis that in order to achieve competitiveness, firms must have access to appropriate human resources. Even though competitiveness has been achieved in the domestic market, the lack

of managerial skills may compromise the feasibility of Uruguayan broiler firms in a MERCOSUR without barriers.

The analysis of the qualitative data suggests that employee training and development programmes appeared not to be factor conditions associated with the success of Uruguayan broiler firms. In the current market, the owner-directors of Uruguayan broiler companies have no intention of investing in the development of the work force. The negative attitude towards investment in the development of employees is common to other agribusiness sectors in Uruguay. Owner-directors believe that there are other areas that have priority over employee training. For most Uruguayan owner-directors the priority is to invest in those company areas that will help to improve cost efficiency.

Firms' participation in research networks with either public or private institutions had no association with their success. Unlike other agriculture industries there are no government funds allocated to support poultry research. Even though the University of the Republic has delivered some seminars on poultry farming, most of them are not attended by the people that work in the industry. These seminars are perceived to be too expensive. The three groups involved with poultry production (broiler companies, ministry of agriculture, and the University of the Republic) work independently. The lack of cooperation between the three parts prevents a further development of the industry. If all parts work together, there would be a better chance for this industry to gain government funds for research in those key areas for broiler development. This seems to conflict with Porter's (1990) hypothesis that training development and research is associated with competitive firms. However, taking into account that Uruguayan broiler firms are only competitive in a protected environment, evidence from the collected data seems to support Porter's view. If today Brazilian and Argentinian companies accessed the Uruguayan market it would be very difficult for domestic companies to remain competitive. The Brazilian poultry industry is a good example of cooperation among firms, research institutions, and government organizations. Cooperation between all actors constitutes one of the strategies which have helped the Brazilian broiler industry to be successful at a worldwide level.

Technological packages are purchased from abroad and then adapted to the Uruguayan production conditions. Having domestic suppliers of production technology was not associated with firm development. This is a common aspect for other Uruguayan

agribusiness sectors which also import technology from abroad. The small and unattractive domestic market has prevented the development of Uruguayan manufacturers and suppliers of agricultural machinery in general. All targeted firms source processing and industrial poultry machinery from abroad. If the industry is analysed within a country context this seems to conflict with Porter's hypothesis that having successful domestic suppliers is associated with competitive firms. However, the lack of competitiveness of Uruguayan broiler firms either regionally or globally supports Porter's (1990) argument.

Table 24: A Comparison between Porter's Factor Conditions and Those Factors Responsible for the Development of Uruguayan Broiler firms.

Porter's Theory Key Contributors to Competitiveness	Uruguayan broiler industry's Key Contributors to Competitiveness	Validity in a Protected Market	Validity in a Regional Market (MERCOSUR)
Factor Conditions			
Human resources	It was identified as a contributor to competitiveness.	✓	✓
Physical resources	This factor has helped the development of Uruguayan broiler firms as Porter's theory suggests.	✓	✓
Knowledge resources	There is no association of this factor with competitiveness. This conflicts Porter's argument.	x	✓
Location factors	There is a positive association between competitiveness and being close to the contract growers and the largest markets of consumption.	✓	✓
Infrastructure resources	Infrastructure resources play a positive and critical role at the start-up phase of the business.	✓	✓
Successful domestic suppliers of technology	There is no association between this factor and Uruguayan poultry firm's development. This conflicts Porter's argument.	x	✓

Demand Conditions

The qualitative analysis of the in-depth interviews did support partially the 'demand conditions' component mentioned in Porter's model. The factor that seemed to be most strongly associated with the increase of *per capita* chicken consumption was demanding customers looking for cheaper sources of reasonable quality meat. This is a direct

consequence of the characteristics of the Uruguayan market which is small, underdeveloped, with a small number of affluent consumers, and where price is a critical issue. The characteristics of the domestic market explain, to some extent, why the broiler companies have had a commodity approach. An outsider could claim that these companies are living in the past and they are missing the opportunity to conquer and create more sophisticated niche markets for consumers looking for added value products.

Qualitative data shows that all Uruguayan broiler firms have invested huge efforts into improving the efficiency of the chicken chain in order to make the price of its products more competitive. This has been a direct result of the fierce competition of this industry, which has pushed incumbent firms to continually improve to remain competitive. The reduction of chicken prices has resulted in consumer demand moving from other Uruguayan meat products that have not been able to reach the same grade of development. Moreover, consumer concern is leading to a tendency to look for healthier meats; the chicken meat chain has had the ability to capitalize on this change in demand. Therefore, the study material supports Porter's (1990) hypothesis that demanding customers push firms' to continuously improve.

All interviewed firms have large customers (supermarkets) which are mainly located in the largest areas of consumption (Montevideo, Canelones, and Punta del Este). Building long relationships with these key customers was found to be relevant for the progress of the firms. This fact supports Porter's argument that close working relationships between the industry and key customers and suppliers help firms to create competitive advantage. In the industry under study, the power gained by supermarkets has forced companies to become more efficient producers. A more efficient production has allowed broiler companies to reach the customer with a more competitive price. This has had a positive impact for the industry that has conquered new consumers moving from other more expensive sources of protein. However, the qualitative data did not provide support for Porter's (1990) hypothesis that firms with a large number of independent local customers are more likely to be successful, because the six companies sell 70% of their production to three supermarkets. The view of Porter has it roots in his idea that the bargaining power of few strong customers is much larger than the power of bargaining of a big number of customers. In the current Uruguayan market conditions, there are not many chances for agri-food products to remain competitive without negotiating with supermarkets. Porter's

idea was developed in different market conditions where supermarkets did not have the power of negotiation that they have today. This aspect of Porter's theory should be revised to take into consideration the conditions of current markets.

Uruguayan consumers do not anticipate buyer needs in other global markets. In fact they have a preference for a chicken having certain characteristics that are not looked for either by the regional or global chicken consumers. Therefore, it could be said that Porter's argument that firms gain competitive advantage when local demand gives them the picture of buyers' needs earlier than foreign competitors does not apply to the case of the Uruguayan chicken industry. On the one hand, the Uruguayan chicken firms have achieved success against the other meat products without having the sophisticated buyers mentioned by Porter, but this competitiveness has been achieved only in the domestic market. Thanks to the excellent health status of the broiler industry, one company is exporting to a market looking for good quality meat. However, interviewees from this company stated that they are hardly making any profit. Therefore, it could be said that Porter's argument remains valid if the success of the Uruguayan broiler firms is assessed against regional or world broiler firms. The particular characteristics of the chicken consumed in Uruguay and the lack of competitiveness of domestic companies internationally make it very difficult for Uruguayan chicken producers to gain a share in foreign markets looking for chicken suppliers with competitive prices. In fact, none of the targeted firms (Pollos Tenent being the only exception) found any association of success with export markets. Qualitative analysis indicated that Uruguayan costs of production prevent chicken firms from competing with international prices. Uruguayan chicken firms have been able to be present in international markets only in those rare occasions when they benefited from government incentives to export. All the efforts are put into the domestic market.

Table 25: A Comparison between Porter's Demand Conditions and Those Factors Responsible for the Development of Uruguayan Broiler firms.

Porter's Theory Key Contributors to Competitiveness	Uruguayan broiler industry's Key Contributors to Competitiveness	Validity in a Protected Market	Validity in a Regional Market (MERCOSUR)
Demand Conditions			
Demanding customers	There is positive association between competitiveness and demanding customers looking for healthy and cheap sources of protein.	✓	✓
Large number of independent local customers	This study does not support this hypothesis. All interviewed broiler firms do business with few large customers. This conflicts Porter's argument.	X	x
Building long relationships with key customers	There is a positive association between this factor and creating competitive advantage. Building good and long relationships with supermarkets is a key issue for broiler firms.	✓	✓
Local demand anticipates buyer needs in other Markets	There is no association of this factor with competitiveness. This conflicts Porter's argument.	X	✓
Export markets	There is no association of firm's competitiveness with export markets. The results of this study do not support Porter's argument.	X	✓

Firm Strategy, Structure, and Rivalry

The qualitative analysis of the study material provided support for most of the 'firm strategy, structure, and rivalry' component of Porter's diamond system.

Analysed data pointed at owner-directors strategic decisions as one of the determinants of firm development. In spite of having different backgrounds all owner-directors have had the ability to create sources of competitive advantage that suited the conditions of the national environment. For example, as Uruguay does not produce technological packages or poultry industrial machinery, companies have to source it from abroad. Owner-directors of the firms have had the ability to adapt foreign technological packages and machinery to the productive conditions of Uruguay. The motivations of owner-directors have also played an important role in the success of the industry. All owner-directors are motivated to gain market share and to become the leader of the industry. These motivations have pushed

firms to improve the efficiency of the whole chain and to create a competitive advantage that has not been reached by other Uruguayan meat chains. As all Uruguayan broiler firms are managed by their owners, their personal assets rely on the success of their business, thus motivating them to perform at their optimum. Therefore, qualitative data supports Porter's hypothesis that motivated key decision-makers with clear goals are a prerequisite for achieving a firm's success.

Even though collected data shows that owner-directors strategic decisions are one of the key factors in determining the development of the industry, owner-directors decisions may put the feasibility of the industry at risk. If the industry remains under the protection of a sanitary barrier, there is no doubt that owner-directors have the skills to run their businesses. However, they refuse to see what is going to happen in the upcoming future. They are reluctant to change and to realize that it is a matter of time before the sanitary barrier falls. Owner-directors are not responding to market forces. To survive in a MERCOSUR without barriers they have to be proactive and they must start thinking about what structural changes are needed to remain competitive.

Results of this study indicate that the educational background of the owner-directors seemed to influence the strategy chosen by targeted firms. For the two companies (Calpryca and Pollos Tenent) whose owner-directors belong to a middle class and therefore, received a good education, quality has an important and growing role in the strategy of the firm. The owner-directors of the rest of the firms were originally chicken growers and they did not have access to higher education. They try to achieve competitive advantage by having the lowest price of the market. For them, price is the cornerstone of their strategy. Avicola del Oeste is a particular case because in spite of the owner-director being originally a chicken grower the strategy of this firm considers both quality and price. More research should be conducted before concluding that there is an association between the educational background of the owner-directors and the strategy chosen by them. Even though few interviewees claim that quality is playing a growing role in their companies' strategy, collected data from government sources indicates that the main concern of all Uruguayan broiler companies is still price.

Porter claims that a firm must choose between competing on the basis of value added for customers (differentiation) or at the lowest cost (cost-based leadership). In the industry

under study companies has proved that it is possible to combine strategies effectively. Although differentiation it is a relatively new phenomenon for the Uruguayan broiler market, Brazilian broiler companies provide a good example where a combination of strategies can be successful. Brazilian broiler firms have been able to adapt their process of production to supply affluent markets with value added customers and less affluent markets with inexpensive chicken cuts. Therefore, this study suggests that Porter's claim that a company should choose only one strategy is incorrect. This particular view of Porter's theory has been already criticized by other authors. Chapter two has provided a review of those authors that have found that companies do not need to choose between differentiation and cost-based leadership to remain competitive.

National prestige, as Porter suggests, is another factor associated with the success of firms. All Uruguayan broiler firms started as, and are still, family businesses. The owners of the firms are very proud of what they have achieved and the name they have gained on the domestic market. Most owner-directors were originally contract growers and belonged to the working class. Those belonging to a working class in a developing country such as Uruguay have to live with many deprivations. Firm's owners managed to change their social class and to enjoy the benefits of being part of the very small population that belongs to the upper class in Uruguay. It is not only about changing the social condition, but also to enjoy the power that comes along with being part of the Uruguayan upper class. Therefore, this has been another incentive to improve their businesses. Even though national prestige is very important for the owners of the firms, it does not seem to be a determinant factor that helps gaining market share. Supermarkets select firms not on the basis of reputation but on the basis of price and secondly quality and delivery times.

Qualified professionals/technicians currently working in interviewed firms have also been found to be another important factor in the development of broiler firms. The Veterinaries and Agronomists responsible for poultry production and some managerial tasks are highly qualified to work in the sector. They were educated in a period where poultry was an important subject in University programmes. In fact, up to the beginning of the nineties the poultry department was recognised for the quality of their courses. This seems to support Porter's argument that firms are likely to succeed where management practices favoured by the national environment fit with the industries' sources of competitive advantages. Uruguayan professionals have been able to overcome the constraint of lack of domestic

technology by adapting foreign packages to the particularities of the country. Professionals have had the ability to change ration composition in order to exploit the natural good conditions of Uruguayan soils to grow certain crops. This shows that Uruguayan professionals working in the broiler industry have the skills, flexibility, and abilities to adjust technologies and processes of production to exploit the conditions and natural resources of the Uruguayan environment.

Porter claims that an important determinant for creating and sustaining competitive advantage in many industries is the relationship between the manager or employee and the company as well as the development of employees. This factor is relevant for those industries requiring ongoing investments to upgrade skills, better understanding of the industry, and communication across functions. Generally, Uruguayan broiler firms do not offer an employee training and development programme, and there are no incentives for their employees. For the majority of the firms (Pollos Tenent being the exception) good relationships between the owner-directors and employees; employee training programmes; and communication across functions were not associated with success. In spite of all owner-directors claiming that there is a good relationship between them and their employees the reality is different. Interviewed technicians and government employees opinion supported by evidence suggests that relationships between owners and employees are not as good as the owners of broiler companies' claim. Therefore, qualitative data seems to conflict with Porter's hypothesis that ongoing investment to upgrade skills and good work relationships are prerequisites for firms' to succeed. However, it has to be noted that Porter's emphasizes that ongoing investment to upgrade skills is a prerequisite for success for those industries which competitiveness is based on higher-order advantages. For industries where competitiveness is based on lower-order advantages ongoing investment to upgrade skills may not be a prerequisite for success.

Qualitative analysis indicated that competence among incumbent firms is strong and fierce. This domestic local rivalry was expressed primarily in the form of price and secondarily in quality. In order to improve cost competitiveness firms have had to improve the efficiency of the whole chicken chain. Gains in efficiency have been translated into a cheaper price to the consumers. Being more competitive in price is linked with the success of this industry as it has allowed gaining market share against substitutes from other meat products. In fact chicken meat has been the only meat that has managed to gain customers from the beef

industry. This is a big achievement in a country where beef consumption is a cultural tradition. This seems to strongly support Porter's argument of the important role that domestic competition has in developing successful firms. The Uruguayan broiler industry was competitive since its inception and became even more competitive with the development of the supermarket's power of negotiation against broiler firms.

According to Porter's framework, the national industry is benefited when some avenues for entry by foreign competitors are removed. In this context local firms copy the good ideas and the stock of knowledge and skill flows in the national industry as personnel move among firms. Uruguayan firms expressed great concern about the entrance of new competitors. In fact, different actions have been taken to deter local or international entrants. Up to the present time, Uruguayan firms have managed to prevent foreign companies from settling into the market. Since the Uruguayan chicken firms achieved success in spite of avoiding competition with foreign firms, it could be said that Porter's argument would not apply to the success of this industry. However, because of this lack of competition with foreign firms it could be argued that this is one of the reasons that has prevented Uruguayan firms from improving their competitiveness in international markets. Brazil and Argentina's governments opted for an opposite strategy. Both countries decided to remove all barriers protecting the poultry industry. The Argentinian broiler industry faced big challenges, mainly coming from Brazil, but at the end it proved to be the right strategy which has forced the domestic industry to make the necessary adjustments to remain competitive in an open market.

Table 26: A Comparison between Porter's Firm Strategy, Structure, and Rivalry Determinant of Competitiveness and Those Factors Responsible for the Development of Uruguayan Broiler firms.

Porter's Theory Key Contributors to Competitiveness	Uruguayan broiler industry's Key Contributors to Competitiveness	Validity in a Protected Market	Validity in a Regional Market (MERCOSUR)
Firm Strategy, Structure, and Rivalry			
Decision-makers with clear goals	There is a high association between owner-director's decisions and competitiveness.	✓	✓
Compete on cost	This has been one of the key factors in explaining the success of broiler firms against their meat competitors.	✓	✓
Firms must choose between competing on cost or quality	This argument is not supported by the primary data of this study. Broiler firms with a combined strategy of differentiation and cost-based leadership have achieved the same level of competitiveness of those firms pursuing only one strategy.	x	x
Motivated managers	This factor has played a crucial contributor to competitiveness. Therefore, it should be considered as an independent determinant of competitiveness.	✓	✓
National prestige	There is a positive association between this factor and competitiveness. It has been an incentive to improve firm's businesses.	✓	✓
Professional technicians	For this industry, professional technicians have helped to develop competitiveness as Porter's suggests.	✓	✓
Good work relationships	This argument is partially supported. On the one hand good work relationships between owner-directors and technicians have helped to spur competitiveness. On the other hand bad work relationships between owner-directors and low income employees have not compromised firm's development.	Partially supported	Partially supported
Ongoing investment to upgrade skills	There is no association of this factor with competitiveness. This conflicts Porter's argument.	x	✓
Domestic competition	There is a high association between this factor and competitiveness. Qualitative data indicates that this determinant has played a bigger role than Porter's model suggests.	✓	✓
Competition with	There is no association of this factor with	x	✓

foreign firms	competitiveness. This conflicts with Porter's argument.		

Related and Supporting Industries

Qualitative analysis of collected data provided partial support for the 'related and supporting industries' component of Porter's model.

Uruguayan broiler firms have many domestic suppliers as well as a few foreign suppliers. Machinery and poultry medicines such as vaccines, vitamins, and virucidals, are sourced from abroad. Local suppliers provide broiler firms with grains, fertilizers, meat flour, and other inputs. Porter's model associates competitive industries with the presence of international competitive supplier industries; ongoing coordination between home-based suppliers and firms; and close working relationships between industry and suppliers. Uruguayan broiler firms have achieved success in spite of the lack of international competitive domestic supplier industries. However, Porter also claims that home-based suppliers lose importance when the inputs do not have a relevant effect on performance of an industry process. In this case inputs can be sourced from foreign nations. For the case of the industry under study, sourcing machinery and poultry medicines from foreign markets does not seem to highly compromise the competitiveness of an industry in which 70% of the cost is the feed for chickens.

Porter maintains that close working relationships between the industry and suppliers might lead to the creation of competitive advantage. When information flows between the two parts, suppliers help firms to perceive new methods and to adopt innovations. Firms have also the opportunity to influence suppliers' technical efforts. As a result of this linkage, the exchange of research and development and the pace of innovation are accelerated. For this study, close working relationships and ongoing coordination with home-based suppliers and firms was a factor partially associated with the success of the sector. For some inputs such as meat flour, qualitative data indicated that interviewed firms have developed long trusting working relations with local suppliers. However, for other agriculture inputs such as grains, firms give priority to economic benefits over developing long term relations and ongoing coordination with home-based suppliers. Porter's hypothesis that local clustering

of supporting industries confers competitive advantage on firms was only partially supported by the results of this study.

Porter argues that concentration of domestic rivals creates the fertile environment for suppliers to settle in the area. When this level of concentration occurs, customers are usually sophisticated and the region becomes a unique environment for competing. Collected data indicates that this industry entails a high level of concentration of domestic rivals. All broiler companies have their contract growers, mills, and offices located in Montevideo and Canelones. However, this concentration has not led to the congregation of suppliers which are dispersed within a radius of 300 km from the firm's feed mills. Therefore, qualitative data seems to conflict with Porter's hypothesis. It has to be noted that some of the grain suppliers are not located close to broiler firm's feed mills, but where the best soils for crop production are located. Soils in Canelones originally had good physical conditions for plant growth and crop production. However, many years of intensive crop production undermined the natural conditions of these soils. Today the best soils in Uruguay are located in the South West of the country where most grain suppliers are based. Therefore, if Canelones' soils would not have been overexploited, grain suppliers might have been congregated close to broiler contract growers as Porter's theory suggests.

According to Porter, the presence of global successful related industries in a nation gives opportunities for information flow and technical interchange as in the case of home-based suppliers. National success in an industry is more likely to happen when the nation entails competitive advantage in a number of related industries. Qualitative analysis has suggested that other related industries were not associated with firm's competitiveness as they do not play a relevant role for the development of competitive advantage in the examined industry. This seems to conflict with Porter's claim that close relations with global successful related industries are associated with competitiveness. Uruguayan broiler companies have proved to be competitive, without having globally successful related industries, only in the domestic market. Brazilian broiler companies, on the other hand, have proved to be competitive in the local and world market. Brazil has successful global related industries such as soya, which is one of the core components of broiler's diet. A similar case happens in Argentina, but with maize. Therefore, if Porter's theory is only analysed in a domestic market, the Uruguayan industry case study contradicts Porter's

hypothesis. However, when looked at globally, the analysis of the broiler industry from Argentina and Brazil gives support to Porter's theory.

Table 27: A Comparison between Porter's Related and Supporting Industries Determinant of Competitiveness and Those Factors Responsible for the Development of Uruguayan Broiler firms.

Porter's Theory Key Contributors to Competitiveness	Uruguayan broiler industry's Key Contributors to Competitiveness	Validity in a Protected Market	Validity in a Regional Market (MERCOSUR)
Related and Supporting Industries			
International competitive supplier firms	For this study there is not a clear association between international competitive supplier firms and competitiveness. There are broiler firms that purchase from international competitive firms and broiler firms that purchase in the local market. Irrespective of where they source from both types of firms have achieved competitiveness.	Partially supported	✓
Coordination between local suppliers and firms	This argument is partially supported. This research indicates that for some inputs (but not all) there is a positive association between competitive advantage and the coordination between local suppliers and firms.	Partially supported	Partially supported
Concentration of domestic rivals leads to a concentration of suppliers	This argument is not supported by this research. The high level of concentration of broiler firms has not led to a concentration of suppliers as Porter suggests. This conflicts Porter's argument.	x	✓
Global successful related industries	There is no association of this factor with competitiveness. This conflicts Porter's argument.	x	✓

Government Policy

The analysis of the qualitative data did provide weak support for the 'government policy' component of Porter's diamond system.

Porter argues that a good government policy toward a nation's industry should: stimulate dynamism and upgrading, and create the right environment to spur firms to upgrade

competitive advantages. He states that the government should not concentrate on protection barriers and instead should play a direct role in those areas where firms are unable to act, such as trade policy, environmental policies, and general education. He also argues that in order to achieve high productivity, firms must have access to specialized human resources, scientific knowledge, economic information, infrastructure, research, and other factors of production. The government can play a role enhancing the quality of these factors by supporting education, training, and research. Finally, Porter claims that successful emerging firms must have access to a nation's capital in order to fund growth and cutting edge technology.

In the Uruguayan poultry sector none of the interviewed firms received from the government grants or benefits that might have helped the success of the firms. In fact all interviewed owner-directors emphasized that the development of their firms was done with their own capital resources, as they found it very difficult to procure finance from banks or other financial institutions. Moreover, the government has not provided firms with business or technical advice when needed. There are no government bodies running programmes to disseminate cutting edge technology for the poultry sector. Even though there are some departments that have conducted some studies in broiler production, these reports are not easy to access for the public in general. In fact getting access to these reports demanded from the researcher a lot of time and effort. Therefore, this study indicates that a nation's industry can achieve success in spite of a poor government policy. This conflicts with Porter's argument that a good government policy is necessary for firms to create competitive advantage.

The only role played by the Uruguayan government was to create a protection barrier when the MERCOSUR agreement was signed. This seems to conflict with Porter's view on the role of government policy, as he states that a protection barrier is an unsuccessful measure in trying to create competitive industries. However, considering that Uruguayan firms are uncompetitive against Argentinian and Brazilian broiler firms, if Porter's argument is viewed in this context, qualitative data gives some support to Porter's hypothesis. Brazilian broiler firms were already top world producers before the MERCOSUR agreement was signed. This was not the case for Argentinian broiler companies. However, the Argentinian government decided not to protect the local industry and to support it with the necessary adjustments to remain competitive against global and regional producers. Even though the

conditions of each country are different collected data indicates that actions taken by the Uruguayan government are not targeting the root of the problem. If the intention of the Uruguayan government is to protect an important industry, then it should implement a package of policies to help the industry to be ready to face the challenge of competing with very efficient producers from the region.

Porter argues that high rates of company tax may limit firms' development as it makes it difficult for firms to make the necessary investments to improve competitiveness. The results of in-depth interviews showed that the action taken by the current government to end the clandestine slaughter, as well as eliminate tax evaders, will make competition fairer between incumbent firms. Companies that had been paying taxes will have more money to invest on those factors that may improve the productivity and efficiency of the businesses. In the past, profit margins of legal companies were reduced because of the illegal competitors having lower costs of production than the companies addressing their tax obligations. To some extent this situation seems to support Porter's view. However, more research is needed before arriving at a sound conclusion.

Chance Events

The analysis of the empirical data provides support for the 'chance' component of Porter's model.

The consumption of meat in Uruguay has been historically linked to the prices of the different kinds of meat. Poultry meat, which used to be in a greater demand during the summer months, received a benefit because the Government encouraged exports of beef to help the economy of the country. This was in order to take advantage of very good international prices paid by those countries unable to supply their domestic market for beef due to the impacts of military conflicts. Therefore, an external event indirectly favoured the Uruguayan broiler industry as domestic beef consumption fell to a level that was in line with Government policy. Due to the decline of beef consumption in Uruguay the broiler industry was able to take advantage and supply the consumers with chicken all year round. Therefore, a chance event was a determining factor that spurred the development of the poultry industry during its start-up phase.

Most interviewees from the six targeted companies and government sources stressed the fact that the declaration of Uruguay as a country free of foot and mouth disease in 1995 boosted the development of the Uruguayan broiler industry. The country's health status allowed the beef industry to conquer new markets and, as a consequence, the domestic price of beef increased- making poultry meat prices more competitive against beef. This is another example that confirms how chance events have favoured the development of the Uruguayan broiler industry.

At the moment of the interview only one poultry company (Pollos Tenent) was exporting. Interviewees from Pollos Tenent stated that exports had been possible because of the bird-flu free status of the country that has helped the firm to conquer new niche markets and to benefit from economies of scale.

During the development of the Uruguayan broiler industry there were some important 'chance' events that have played a role in the success of the sector. In light of these facts, Porter's 'diamond' seems to underrate the value that 'chance' events have played in the development of Uruguayan broiler firms.

Interaction of the Determinants of Competitive Advantage

The success and development of the Uruguayan poultry sector provides partial support for Porter's hypothesis that the determinants of competitive advantage have reinforced each other over the industry's 42 years of history.

Qualitative data indicated that domestic rivalry and geographic industry concentration acted as a system, spurring the development of competitiveness within the Uruguayan chicken industry. Infrastructure factors at the start up phase of the businesses and the owners' commitment is another example where two single determinants contributed to the development of competitive advantage in the Uruguayan broiler industry. Being close to the larger customers has helped Uruguayan broiler firms to quickly access market information and emerging needs.

The firm's strategies and long relationships with some supporting industries spurred the development of Uruguayan broiler firms. Demanding customers for cheap sources of protein and chance events contributed to the success of the broiler industry in the domestic

market. All these examples provide support for the 'interaction of the determinants of competitive advantage' argument of Porter's theory.

Porter's thesis stresses the idea that domestic competition spurs the rapid development of skilled human resources, and specialized infrastructure. This hypothesis was not particularly well supported by the interviewed firms. Collected data indicated that in spite of the fierce competition of the Uruguayan broiler industry neither skilled human resources nor specialized infrastructure were developed.

Summary

Qualitative analysis has permitted the following conclusions to be made:

i. The success of the industry is linked to the retail price of chicken.
ii. Research into the size of the firms and their respective market share indicates that fierce competition has pushed incumbent firms to continually improve the efficiency of their businesses to remain competitive.
iii. The educational background of the owner-directors plays an important role in determining the strategy chosen by interviewed firms.
iv. The domestic industry has a positive edge over its competitors because Uruguayans have a unique requirement for large size chickens. The industry however cannot rely solely on this requirement and needs to make changes so it is prepared for any future developments.
v. Uruguay needs to promote the fact that it has the best hygiene conditions for chickens in the region.
vi. The Uruguayan chicken industry's main weakness is that it has been developed under Government protectionism and it will therefore be a challenge for the industry to demonstrate its viability in an open competitive market.
vii. The qualitative analysis suggests that Uruguayan broiler firms do not have leaders (owner-directors) with sufficient understanding of management to be able to run the companies in a new competitive environment without protection barriers.
viii. Uruguay has the highest energy and labour costs of all the MERCOSUR countries so that net margins will fall and therefore management efficiency will be indispensable.

ix. The competitiveness of the Uruguayan broiler industry could be negatively affected when environmental issues are taken into consideration. Brazil, one of the possible competitors that could put in danger the feasibility of the Uruguayan chicken industry, has the most extensive and the deepest environmental protections. Therefore, if environmental costs are internalized Brazilian broiler firms would have a competitive advantage against Uruguayan broiler firms.

x. Retailers have an important impact on the chicken production chain. The large volume of purchases handled by the supermarkets and their wide geographical distribution makes them very powerful. Recently, international brands have started to enter the Uruguayan market in two ways, by take over or merger. These international groups will impose new ways of purchasing, new characteristics in the presentation of the products and their own brands. They will have international supply channels in place and will buy the cheapest products available.

After having critically analysed the findings from the qualitative data, the last chapter now moves on to present the conclusions and recommendations of this study.

Chapter 10

Conclusions

The purpose of this final chapter is to present an overview of the main findings of the research, and to draw out the resulting implications and the potential contributions to knowledge. It contains four parts. The first part accomplishes the conceptual objectives of the research. It assesses the ability of Porter's (1990) diamond system to explain competitiveness in the targeted industry and presents an adaptation model that addresses the shortcomings of Porter's framework in explaining the domestic success of the Uruguayan broiler industry. The second part addresses the empirical objectives of this study. It evaluates what MERCOSUR's implications are for the competitiveness of the Uruguayan broiler firms and the feasibility of Uruguayan broiler firms to compete with their counterparts from Brazil and Argentina. The third part accomplishes the last central objective of the thesis. This section proposes policy recommendations that would help Uruguayan chicken firms to compete with international firms in a regional market without barriers. Data gained via the interviews was used to accomplish the first two parts. To elaborate policy recommendations, secondary data was also considered. In developing these three parts, this chapter has accomplished the principal objectives associated with the study which are described in chapter one. Finally, the fourth section presents contributions to knowledge, considerations for future research, limitations, and reflections.

Is Porter's diamond able to explain competitiveness in the Uruguayan broiler industry?

The qualitative methodology used to test Porter's model brought to light the main factors responsible for the success of the Uruguayan broiler industry. The discussion in chapter nine identified those particular factors that have played a role in the development of the referred industry. This section summarises these factors which will be the basis for the development of an adjusted model.

The analysis of the collected data revealed that those 'factor conditions' that played a critical role for the success of Uruguayan broiler firms were: infrastructure resources including water, electricity, and transportation network, and the availability of local human resources (technicians) during the start-up phase of the business. The analysis revealed that the port structure of Montevideo's port is limiting a further development of the industry. It

also identified that the lack of employees with the required qualifications to work in the broiler industry may also compromise the development of the industry in the near future.

Being close to contract growers and the largest markets of consumption were also identified as determinants of success in all interviewed firms. Because of the fierce competition within the sector and the dynamism of a market with prices changing overnight, those broiler companies that tried to locate their businesses relatively far from the main centres of consumption went bankrupt after few months.

The main 'demand conditions' associated with the success of the firms targeted in this study were: demanding customers looking for cheaper and leaner sources of protein, and building long relationships with key customers. Price is the main driver for consumers' choice. It is relevant to keep in mind the characteristics of the Uruguayan market which is small, underdeveloped, and mainly integrated by low-income consumers.

In this industry some demand condition aspects that Porter considers relevant for achieving competitiveness were not evident. For instance, there is no association between success and consumers who anticipate buyer needs in other markets. Another aspect not supported by this industry-case study was Porter's hypothesis that firms with a large number of independent local customers are more likely to be successful.

From the analysis of in-depth interviews, 'firm strategy, structure, and rivalry' were very much a contributing factor to success in this industry, although, a few aspects that Porter claims to be important in facilitating success, such as ongoing investment to upgrade skills, or choosing between differentiation or a cost-based leadership strategy were not in evidence. The key elements associated with success in the interviewed firms were: owners' and professionals' ability to adapt foreign technological packages and machinery to the conditions and particularities of the national environment; the motivations of owner-directors; key decision-makers with clear goals; price competition; national prestige; highly qualified technicians at the start-up phase of the business; and strong and fierce competition. The fierce competition among broiler firms has been one the relevant factors in shaping the success of this industry as Porter would have suggested.

The component of 'related and supporting industries' in Porter's 'diamond' was partially supported by the findings of this study. The key 'related and supporting industries' themes that were to some extent associated with the progress of Uruguayan broiler firms were: close working relations and ongoing coordination with home-based suppliers, concentration of domestic rivals, and to be physically close to their customers. On the other hand, the presence of international competitive supplier industries, and local clustering of domestic suppliers were factors not associated with the development of the industry under study.

The analysis of the data suggests that there is a weak association between the success of the Uruguayan broiler industry and the themes termed by Porter in its 'government policy' component. Porter's argues that the government should create the appropriate environment for companies to succeed concentrating on those areas such as, education, research, infrastructure development, and trade policy. The Uruguayan government has not been involved in any of the areas mentioned by Porter. In fact the Uruguayan government was involved in the creation of a protection barrier which according to Porter is an unsuccessful measure to foster competitiveness. However, the lack of competitiveness of Uruguayan broiler firms against international or regional poultry firms seems to support Porter's claim that a protection barrier is an unsuccessful measure in trying to create competitive industries. Even though Uruguayan broiler firms are successful in the local market their presence in international markets is insignificant. The only theme supported by the study material, related the government determinant of competitiveness, was Porter's hypothesis that high rates of company tax may limit firms' development. In the case of the Uruguayan broiler industry an unfair tax system making some companies pay more taxes than others was preventing a further development of the industry.

From qualitative analysis, the 'chance events' component of Porter's framework, was an important contributing factor to success in this industry. The three 'chance events' determinants for the success of interviewed firms were: the impacts of military conflicts on international beef price; the declaration of Uruguay as a country free of foot and mouth disease in 1995; and bird-flu. All these factors helped the Uruguayan broiler industry to become more competitive against its meat rivals.

To conclude, analysed qualitatively, the Uruguayan broiler industry, reflects important aspects of Porter's 'diamond' in action. However, modifications of the model are required to fully explain the success of this industry.

An Adapted Model for Explaining the Success of Uruguayan broiler firms

The foregoing analysis detected those factors that were critical for the success of the interviewed firms. This section will present an adaptation of Porter's 'diamond' to the singularities of the firms investigated in this research. The suggested model takes into account those factors and pressures that seem to have shaped the development of firms in this study.

The adapted model will only include under Porter's determinants of competitive advantage those factors that have played an active role for the development of the firms targeted in this study. The researcher's view is that Porter's model provides a useful framework to analyse the competitiveness of firms in different industries but the components need to be looked at in detail because the reality of each firm/industry is unique. A few scholars have criticized Porter's model for being too broad and therefore, including everything that might contribute to develop competitiveness, thus identifying nothing as particularly relevant. For this study the holistic approach of Porter's model has proved to be a valuable framework to unveil reasons for competitiveness. The complexities of understanding competitiveness in an industry require a model that considers external as well as internal factors of competitiveness, and Porter's diamond embraces both of them.

For Porter, human resources, knowledge resources, physical resources, capital and infrastructure are the main factors of production influencing the competitiveness of firms in any industry. Among the variety of factor conditions identified by Porter, there were three factors that the Uruguayan market supplied and influenced the competitiveness of broiler firms. These three factors were: infrastructure (electricity, water, and a well-developed network of roads), human resources (qualified veterinaries and agronomists), and location (being close to the larger centres of consumption). The adjusted model takes into consideration these particular factor conditions.

Applying Porter's framework to the Uruguayan poultry sector, it seems that the 'firm strategy, structure, and rivalry' component is too broad and it lacks focus to what are the

driving forces in determining the success of Uruguayan firms in the selected industry. The adapted model places more importance on the role of rivalry and therefore, it is considered as an independent determinant factor. Fierce and strong competition has played a critical role in the development of the Uruguayan broiler firms. Consequently, it should be included in the model as a distinct factor from the 'firm strategy, structure, and rivalry' determinant in Porter's model. Evidence from the industry-case study shows that competing on price was the main factor in shaping the development of the broiler industry. Most Uruguayan consumers decide what goods and services to buy mainly based on price. Fierce competition, along with supermarkets increasing power of negotiation, has forced broiler companies to become more cost efficient. This has been translated into a reduction of prices to consumers. As chicken prices have become more competitive, the industry has been able to gain new customers from other meat chains, which have not been able to reach the same level of development. For these reasons, competition is considered as a separate factor in the adapted model. The model refers to domestic competition because the industry has not received competition from other markets due to the protection of a sanitary barrier. The model should be revised when the protection barrier falls.

Similarly, the owner-directors motivations were detected as a factor playing an important role for the progress of the interviewed firms. Qualitative data shows that the motivation and passion of owner-directors was another key factor for the success of the industry. Therefore, it will be considered as an independent determinant of competitiveness in its own right. The fact that all family assets are invested in the company has motivated key decision-makers to continually improve. Motivation in its own does not create competitive advantage. However, the interaction between motivation and other identified determinants of competitive advantage has created the right environment for Uruguayan broiler companies to continually gain a market share where other meat chains such as pork or fish have failed.

Demand conditions were a large contributor of success in the targeted industry as Porter's diamond would have predicted. Uruguayan demanding consumers, looking for cheap sources of protein, have stimulated domestic broiler firms to improve their production efficiency. As there are no multinational local buyers, the model only includes domestic buyers under the demand conditions factor.

The qualitative analysis did not support the importance that Porter's 'diamond' gives to the role of government policy. For the Uruguayan broiler firms the role played by the government was irrelevant with a minimum influence on firm strategy and structure. Two-way arrows are put between government policy and firm strategy and structure because firms have lobbied the government to keep the sanitary barrier in place. The adapted model represents this reality. There are no arrows connecting the government with the other determinants of competitive advantage, because the government has not played any role in key areas such as human resource development, knowledge, dissemination of economic and technical information, infrastructure, research, and the other determinants of competitiveness.

Close working relationships and ongoing coordination with home-based suppliers and firms were factors partially associated with the success of the sector. They are represented in the model as supporting industries within the local market. However, relationships with other related firms were not associated with firm's competitiveness and therefore, they are not included in the adapted model.

Chance events have played a larger role in the development of Uruguayan broiler companies' competitiveness than Porter's framework would have suggested. Because of that, the adjusted model will include chance events as a main determinant of competitiveness. Within the model, continuous arrow lines reflect this reality. Chance events are connected with other determinants of competitiveness with one arrow ends. The model did not depict two arrow ends, because chance events have influenced other determinants, but they have not been influenced by them.

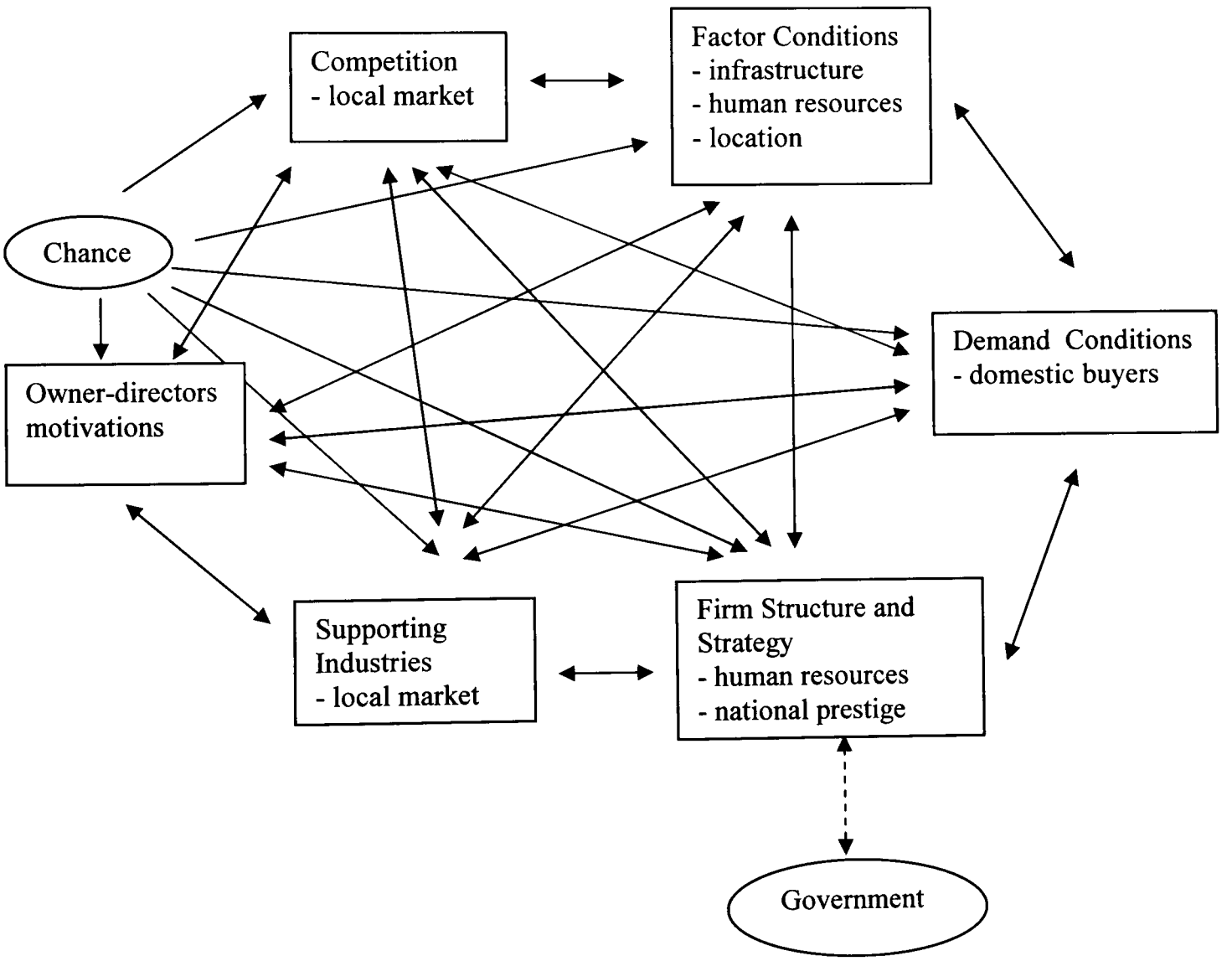
In this industry, a single determinant of competitiveness would sometimes operate in conjunction with other determinants to achieve competitiveness. Analysis of qualitative data has permitted the identification of the following examples where two determinants of competitiveness acted as a system fostering the development of broiler firm's competitiveness:

- domestic rivalry and geographic industry concentration;

- infrastructure factors at the start up phase of the businesses and the owners' commitment;
- firm's strategies and long relationships with some supporting industries; and
- demanding customers for cheap sources of protein and chance events.

The following figure represents those determinants that have been responsible for the development of competitive advantage in the interviewed Uruguayan firms within the poultry industry.

Figure 10: The determinants of competitive advantage in the Uruguayan poultry industry



Porter's level of focus is national but not regional. It provides a suitable framework to analyze the competitiveness of industries such as the one in study. However, if MERCOSUR continues progressing then the above model would need to be modified to

deal with the impact of regional forces on the competitiveness of Uruguayan broiler firms. By then multinational activities should be incorporated into the analysis. The double diamond would be an interesting option to incorporate the impact of internationalization.

MERCOSUR's Implications on the Competitiveness of Uruguayan broiler firms

Chapter four critically analyzed relevant aspects of the MERCOSUR union. From that review it was concluded that there is uncertainty about the future of this regional trade block. However, the latest events suggest that MERCOSUR is still progressing. The main factors fostering the development of MERCOSUR are the current stabilization of the region, coupled with presidents with very similar ideas.

This integration process has profoundly affected the Uruguayan economy which has sharply increased trade with Argentina and Brazil. During the process of integration many Uruguayan companies went bankrupt because of their lack of competitiveness against Argentinian and Brazilian firms. It is very difficult for a small country such as Uruguay to compete from an industrialized point of view, but it can compete from the point of view of quality in manufacturing and in services. For instance, the improvement in quality of the Uruguayan wine industry provides a good example where a domestic agri-food sector was able to open up new niche markets before larger wine producers from Brazil and Argentina.

In this scenario, the Uruguayan poultry sector is one of the very few industries that still enjoys the benefits of exceptions to the common external tariff. However, these exceptions are likely to be ended in the short term. In comparison to those in Argentina, Uruguayan broiler firms are less competitive due to the Argentinian poultry mills handling larger scales grain purchases and because of the current Argentinian policy of exchange that makes some inputs cheaper than in Uruguay. The Argentinian government has implemented policies to keep the price of raw materials down in an attempt to keep inflation under control. Moreover, agriculture producers have benefited from subsidized fuel. This fact, jointly with an exchange policy favouring the export sector, is boosting the competitiveness of Argentinian agriculture firms against Uruguayan agriculture firms in general. Argentinian presidential elections are on the way and these policies might be political propaganda rather than a long-term strategy. More time is needed to figure out whether the Argentinian economy has the resources to keep the promised policies after the

elections. Argentina has also a competitive advantage that arises from the fact that it has the best soils of the MERCOSUR area, allowing Argentinian farmers to achieve larger and more stable harvests than Uruguayan farmers. Prices of maize (poultry food input) position Argentina as the most competitive producer followed by Brazil and Uruguay respectively. Another advantage of Argentinian broiler firms is that they have developed the know-how and skills to compete in a free market. Even though the government has supported Argentinian companies during the process of opening the economy to regional competition, Argentinian broiler companies would have not survived without making the required adjustments to remain competitive against very efficient broiler companies from Brazil.

Uruguayan broiler firms are also less competitive than Brazilian poultry firms. The competitiveness of Brazilian poultry firms relies on the following reasons: market promotion efforts coming from the Brazilian government and the poultry industry; indirect and concealed subsidies such as subsidies to grow maize; a favourable climate for growing grain; cheap and dedicated labour; the ability to tailor products to customers locally and in foreign markets; and entrepreneurs that build plants like cathedrals that have always been updated. Moreover, Brazil is the soya world producer leader. Soya and maize are the core ingredients for poultry food (Hewson, 1995; Smith, 2005).

From the above discussion it is clear that if the barriers that protect the Uruguayan broiler industry fall, it will be very difficult for Uruguayan broiler firms to remain competitive against Argentinian or Brazilian poultry firms. Argentinian and Brazilian poultry firms have the economies of scale, world trade channels of commercialization, capital requirements, and know-how to penetrate the Uruguayan market. Even though the small Uruguayan market does not seem to be particularly appealing for the big players of MERCOSUR, its strategic position between Argentina and Brazil may attract some poultry firms. Moreover, Brazilian and Argentinian firms may think to target the Uruguayan market to exploit the excellent health status of the country and from there conquer those markets looking for quality chicken.

Another threat comes from international supermarkets. Day after day the retail sector is gaining more power in all MERCOSUR countries (Comisec, 2004). Big international supermarkets chains have targeted this market imposing their rules upon domestic

suppliers. Big retailers usually purchase their products from big food processors. They look for mass-produced food that is uniform and gives supermarkets the possibility to put a standard, regular product into every store. Evidence suggests that a transnational retailer that sets up operations in emerging market economies tends to alter procurement practices. In general, transnational retailers have increased the level of global sourcing to get their products (Dicken 2007). Exceptions discussed in chapter six have prevented these international supermarkets from sourcing some products, such as chicken, from the most convenient suppliers within the MERCOSUR countries. In fact, international supermarkets that have been settled in Uruguay for a few years have expressed their willingness to purchase from the most competitive MERCOSUR producer to supply not only its Uruguayan stores but also Argentinian and Brazilian stores. If the development of MERCOSUR continues, the supermarkets will be able to purchase chicken from Argentina or Brazil. They can supply the demand with refrigerated product purchasing from the centres of production that are inside a radius of 1,000 kilometres. It must not be taken for granted that Uruguayan poultry products will automatically find a place on such highly competitive sales counters, especially when global sourcing is now an everyday fact of life. Moreover, it would not be difficult for Argentinian or Brazilian poultry firms to supply the Uruguayan market from their main centres of production. With few adjustments to the chicken's diet Argentinian and Brazilian poultry firms would be able to satisfy the unique size of bird required by Uruguayan consumers.

The question is: How is the Uruguayan broiler industry likely to respond to this threat? Qualitative analysis indicates that apart from a very few companies trying to improve the quality of the product, there is no strategic plan to face the eventuality competition from MERCOSUR poultry companies. All owner-directors rely on their ability to lobby the government in order to keep the sanitary barrier in place. Most of them are in their late fifties and they developed their businesses during the era of the import substitution policies where the core of the government strategy was to give support to a local industry orientated to the domestic market. Qualitative analysis of the collected data indicates that it is very unlikely that Uruguayan broiler firms will react in time. Moreover, the qualitative analysis suggests that Uruguayan broiler firms do not have leaders (owner-directors) with sufficient understanding of management to be able to run the companies in a new competitive environment without protection barriers. At the moment, the industry has well-trained technicians but the key decision-makers, who are also the owners of the companies.

lack the necessary up-to-date management and strategy knowledge. This could prove to be one of the chicken industry's greatest weaknesses and it could put its own feasibility in danger. Until now chicken firms have been capable of incorporating new techniques in production methods and following the trends of Uruguayan consumers. However, these changes were achieved within the comfort of a market protected by the sanitation barrier. The industry has not developed the necessary management skills to survive in a fiercely international competitive environment.

MERCOSUR represents a potential threat for Uruguayan broiler companies notably when the members of this trade block will be able to access the Uruguayan market. At the moment the market conditions of MERCOSUR are not free. A number of sensitive products, such as chicken, have been granted tariff exceptions. If the development of MERCOSUR continues, these exceptions will end. In a fully operating MERCOSUR block Argentinian and Brazilian poultry firms may displace Uruguayan broiler firms.

An outsider could claim that the disappearing of Uruguayan broiler companies against Argentinian and Brazilian more efficient producers should be seen as a natural progression of internationalization. It could be also argued that it was Uruguayan broiler owner-directors fault as they did not adjust their businesses strategy in time to face competition. The government, through the application of a sanitary barrier, has bought precious time to allow broiler companies to attack those key areas that needed to be improved. It could be also argued that Uruguayan broiler companies are not responding to market forces, are not proactive, and are not doing risk assessment. There is a lot of truth in these asseverations, but if everything remains unchanged there is a major risk that the Uruguayan broiler industry will disappear once the sanitary barrier is lifted. Supporters of the free market economy would probably claim that the disappearance of the Uruguayan broiler industry is the best option for the market. In the light of current events, the free market approach should be exercised cautiously. It has to be understood that in a developing country such as Uruguay with a high rate of unemployment the disappearance of the Uruguayan poultry sector may cause negative impacts. Firstly, those who will lose their jobs are unlikely to be relocated in other industries. The poultry industry gives employment to 26.2% of all the labour force that works in the Uruguayan agro industry. Secondly, the disappearing of the poultry industry will also impact other industries which rely on poultry businesses to survive. It has to be highlighted that the Uruguayan poultry industry consumes 65% of the

total Uruguayan production of maize, more than 50% of the total production of sorghum. and about 40% of the total production of sunflower. It is clear then that the disappearance of broiler companies would directly impact other sectors of the Uruguayan economy.

In this scenario government intervention is required to make key decision makers of the industry aware of the upcoming threat that may put their businesses under risk. However, qualitative data indicates that broiler owner-directors refuse to see the possibility that the barrier protecting the industry may disappear.

Government intervention has been exercised by Uruguayan big MERCOSUR neighbours. Even though Brazil and Argentina has eliminated barriers of protection, both countries have adopted different packages of subsidies to protect the interest of different industries such as poultry. The Uruguayan government may take an active role in settling the right environment to allow Uruguayan broiler companies to improve their competitiveness. The role of the government will be also relevant in terms of controlling disloyal importation and in adopting the international certification standards to ensure the excellent health status of the Uruguayan chicken industry. In a demanding world of high quality and safe sources of protein, Uruguay must make full use of its sanitary conditions.

Policy Recommendations

This section elaborates policy recommendations derived from the primary and secondary collected data that would help Uruguayan broiler firms to be prepared to compete with international poultry firms from Brazil and Argentina in a regional economic block without barriers.

A successful government policy aims to achieve different objectives, such as increase the wealth generated in the economy, decrease the unemployment rate, preserve employment, increase the quality of jobs, develop certain parts of the country, diminish inequalities, protect the natural environment, help firms to gain competitive advantage and so on. In order to help firms to gain competitive advantage, governments may legitimately play a role in those areas where firms are unable to act- such as trade policy, environmental policies, research, quality control, tax policies, and general education.

The government, through its policy, can influence the business environment with different measures such as taxation, competition policy, government purchasing practice, inflation, protections, export promotions, environmental health regulations, and so on. Government can also help firms to develop competitiveness by improving their access to finance. information, professional advice, training, and infrastructure.

The qualitative results showed that in the Uruguayan broiler sector the role played by the government was insignificant to the success of interviewed firms. However, the competitiveness of Uruguayan broiler firms has only been achieved in a domestic protected market. If the development of MERCOSUR continues, broiler firms will no longer enjoy the safety of a protected environment. Qualitative data indicates that without the intervention of the government there are not many opportunities for Uruguayan broiler firms to compete in an open market with their counter parts from Brazil and Argentina. Policies that are recommended to prepare Uruguayan broiler firms to compete efficiently in the new environment are discussed below.

Local human resources were identified as one of the factors constraining a major development of interviewed firms. The qualitative analysis indicated that the domestic market has difficulties in supplying poultry firms with qualified employees to work either in poultry farm production jobs or managerial positions. This is a relative new phenomenon faced by poultry firms, because in the past the domestic market was capable of supplying the poultry sector with well trained technicians and qualified employees. However, changes in the Universities academic programmes coupled with unavailability of poultry technical courses have resulted in a local market unable to provide employees with the required skills to work in the dynamic broiler sector.

In order to ameliorate the above situation, the first recommended policy would be to directly involve the government in the creation of specialized human resources. Public University programmes need to be carefully reviewed and the government must ensure that graduates have the skills to enter the broiler job market. Moreover, The University of Work of Uruguay (UTU) should perhaps start to run poultry technical courses again. In a country with more than 12% unemployment, it does not seem sensible to stop running poultry courses when the poultry industry is one of the few industries creating job opportunities. As already discussed the poultry industry gives employment to the 26.2% of all the labour

force that works in the Uruguayan agro industry and therefore, the government should play a role enhancing the quality of human resources. The creation of human resources takes time and effort. However, since the barrier that protects the poultry industry is not likely to be lifted until the end of 2010, there is still time to deliver short courses at UTU in order to prepare people for the upcoming challenging environment. Even though there is not enough time to prepare Veterinaries and Agronomists, the professionals currently working in the industry have the skills to work in the poultry sector and they will not reach the age of retirement for at least another five years. This would give the time to the University of the Republic to supply the market with qualified technicians.

None of the interviewed firms have been involved in research with private or public institutes. For Uruguayan firms to remain competitive in the new environment, the government should not leave research and development completely in the hands of poultry firms. In fact, the Uruguayan government has various agricultural research centres to research on soil management technologies (INIA La Estanzuela), farming technologies (INIA Las Brujas), fruit production (INIA Salto Grande), crops and cattle production (INIA Tacuarembo), and sheep, rice, and improved sown grasses (INIA Treinta y Tres) (Ministerio de Ganaderia Agricultura y Pesca, 2003). Surprisingly, none of the research centres have the capacity to research on poultry themes. Therefore, the second recommended policy would be the allocation of resources to conduct poultry research in one of the agriculture centres that belong to the government. These resources should be carefully allocated in those areas that are identified as priorities for the competitiveness of the industry. Private firms must be included in the decision-making process.

Not only there is no government research conducted on poultry but also there are no government bodies running programmes to disseminate cutting edge poultry related technologies or other relevant information related to poultry themes. There is no organization where firms can address enquiries when needed. The researcher has already described the difficulties in accessing broiler reports. Therefore, the third policy would be the creation of a committee within the Ministry of Agriculture of Uruguay with the tasks to disseminate all information that may help poultry firms to enhance their productivity and to act as a consultant body. This committee will provide practical help and guidance in strategic management, collaborative research, business planning, financial assistance, marketing and quality. According to collected data these are the areas where poultry firms

need assistance and training to be prepared to face competition from larger broiler companies from Brazil and Argentina.

A good policy must ensure that domestic competitive firms have access to low cost available capital. The lack of access to the nation's capital forced all targeted firms to develop their businesses with their own resources. This situation contrasts with what happens in Argentina and Brazil, where poultry firms not only get access to low cost capital but they also enjoy different types of incentives such as subsidised credits, concessions of land, concealed subsidies, and tax and tariff exemptions. The fourth policy recommendation would be to allocate low cost capital to poultry firms. This can be accomplished through The Republic Bank of Uruguay (BROU) that handles more than 50% of the operations in the domestic market.

In order to achieve high productivity and to remain competitive when operating in a regional economic block, Uruguayan firms in general must have access to infrastructure. The government can play a role ensuring that infrastructure constraints are not limiting the progress of domestic firms. The qualitative analysis indicated that a further development of poultry firms could be limited by the Uruguayan port structure. Therefore, this paper would propose as the fifth policy, the creation of a commission to study the feasibility of improving the mill capacity of Montevideo's port and to assess options for deepening Montevideo's harbour in order to accommodate larger cargo ships. To address the constraints imposed by grain milling capacity seems to be much easier to achieve. However, a deepening of Montevideo's port would bring benefits not only for poultry firms but to all Uruguayan agriculture firms that are the cornerstone of the country's economy.

Trade policy is another area where a government can play a role that may help national poultry firms to achieve competitiveness. So far, the Uruguayan government has done very little to promote the excellent health status of the Uruguayan chicken industry in foreign markets. Even though Uruguayan broiler firms are not competitive in price, the government should support domestic firms in conquering niche markets willing to pay more for high quality sources of chicken meat. In fact one of the interviewed firms (Pollos Tenent) is already taking advantage of the Uruguayan bird-flu free status and exporting to a niche market. The sixth proposed policy would be to allocate some funds to the Ministry

of Commerce to promote Uruguayan chicken meat abroad and to help poultry firms to identify potential customers and target them accordingly. In addition, the Ministry of Commerce should provide information about foreign markets to assist those Uruguayan broiler firms willing to export. This would not be anything novel as the Uruguayan government has successfully opened new markets for the beef industry. The idea is to make use of the existing office of government commerce to foster poultry trade. If the health status of poultry firms is to be used to promote the industry abroad, the government must ensure through its legislation that the necessary controls are in place to maintain and protect the excellent health status of the sector.

Qualitative data indicated that firms do not invest in employee development and training. For low income employees the situation is critical, because most owner-directors consider them just an asset to make money. In fact, many of them are not provided with minimum working conditions. Government, through its policy, can ensure that all employees are provided with acceptable working conditions. The seventh policy would be to enact legislation to ensure that employees are working under acceptable conditions and to encourage permanent employment. If long term relations are created between the firm and their employees, it is likely that owner-directors would invest in the training of employees which, in turn, would increase firm's competitiveness.

Government has the chance to influence the rate of capital investment. Firms that continuously reinvest part of their overall revenues are more likely to create competitive advantage than those firms that do not reinvest. The eight proposed policy would be to enact policies that encourage high rates of capital investment in firms. For the interviewed firms tax policies were identified as an issue of major concern. The government has started to take measures to abolish tax evaders. After this promising start the government should concentrate on tax policies aiming to increase capital investment. For instance, tax benefits may be granted to those companies that reinvest. The government could also reduce taxes to make the competition between Uruguayan firms and regional firms which are granted tax exemptions fairer. However, tax reductions need to be carefully considered as the government requires a certain level of taxes to meet its social responsibilities and investments in the community.

From the critical review conducted in chapter five, this study suggests that the competitiveness of the Uruguayan broiler industry could be negatively affected when environmental issues are taken into consideration. Brazil, one of the possible competitors that could put in danger the feasibility of the Uruguayan chicken industry has the most extensive environmental protections. Because of that if environmental costs are internalized the Brazilian poultry firms would have a competitive advantage over Uruguayan broiler firms.

Therefore, the last policy would be to elaborate a programme that would help to improve the environmental protections of the country. Some of the measures to be taken are:

i. to concede to the Ministry of Housing, Territorial Ordering, and Environment the power to enact and enforce environmental legislation,

ii. to promote higher environmental protection,

iii. to enact legislation that would allow the ban of imports from other MERCOSUR members that do not comply with national levels of environmental protection,

iv. to support the development of technologies that are in line with environmentally friendly production,

v. to reward with economic incentives those firms that show environmentally sound results, and

vi. to include environmental themes in education programs.

A peculiarity of environmental issues is that the dividing line between local, national, international, and global environmental issues is difficult to draw. Because of that, further to what Uruguay can do at a local level, the country should encourage other MERCOSUR members to address environmental issues as a block. The MERCOSUR environmental agreement is just a framework document that proclaims the intention of future action but does not oblige its members to comply with any environmental regulation. Uruguay, as the hosting country of MERCOSUR Administrative Secretariat (SAM), should promote the creation of a supra-national MERCOSUR commission with the resources and authority to enact and enforce environmental laws.

A carefully thought-out and effectively delivered policy along the topics above mentioned, should have the potential to improve the competitiveness of Uruguayan broiler firms against Argentinian and Brazilian firms. However, more research is required to determine its best delivery strategy and implementation cost.

Policies elaborated in this study aimed to improve the competitiveness of Uruguayan broiler firms within a regional market. Even though regional agreements conflict with the main WTO objective of free trade, policies developed here do not impose any additional barriers to non MERCOSUR members. This study suggested trade controls to protect health and environmental issues. None of these trade controls are against WTO rules which support trade barriers to protect consumers, the environment and the spread of disease. It should be noted that in a scenario of free trade these policies should be reviewed.

The following table summarizes the key determinants of competitiveness that need to be amended by policy.

Table 28: Policy Recommendations for the Uruguayan broiler industry

Determinant	Problem	Suggested Solution
Local human resources	Inadequate supply of skilled labour.	Government review of University programs. Training at the University of Work of Uruguay.
Research and development	Lack of domestic research on poultry technological packages.	Allocate resources to conduct poultry research at agricultural research centres.
Knowledge resources	Lack of consulting bodies to address firm's enquiries and to disseminate cutting edge poultry technologies.	Creation of a committee (consulting body) at the Ministry of Agriculture of Uruguay.
Capital resources	Lack of access to the nation's capital.	Allocate low cost capital to the poultry industry.
Infrastructure resources	Port infrastructure constraints.	Improve Montevideo's port mill capacity. Deepening of Montevideo's harbour.
Trade	Poor promotion of Uruguayan poultry excellent health status.	Grants to the Ministry of Commerce to promote Uruguayan poultry meat and to help the local industry to open new markets.
Health state	Lack of adequate regulations and inefficient sanitary control.	Adopt international certification standards. Control illegal importation.
Employment conditions	Exploitation of low income employees.	Legislation to enforce acceptable working conditions and to encourage permanent employment.
Taxation	Lack of tax exemptions.	Reduce taxes and enact policies to encourage firm's reinvestment.
Environmental protections	Weak environmental protections.	Enact and enforce environmental legislation. Economic incentives to companies adopting environmental friendly techniques.

Contributions

An understanding of what causes some industries to be more competitive than others is essential for effective policy prescriptions and business decisions.

It is believed that the present study makes a contribution to the validity of Porter's concept of national competitiveness in explaining the success of broiler firms in a developing country such as Uruguay. There is no previous work that has tested Porter's diamond model in Uruguay. The model developed for this thesis contributes to the body of literature that has modified Porter's diamond system to implement it in different scenarios.

This paper also makes an empirical contribution. This is the first study that has evaluated the implications of MERCOSUR for the viability of Uruguayan broiler firms. Qualitative analysis shows that MERCOSUR represents a potential threat for Uruguayan broiler companies, notably when the members of this trade block are able to access the Uruguayan market. To mitigate this threat, this research has also contributed with a package of policy recommendations that would help Uruguayan broiler firms to be prepared to compete with international poultry firms in the new risky and challenging environment.

Finally, this research contributes with a different approach to understand competitiveness in an agribusiness industry. In Uruguay the two schools of research: business and agriculture sciences walk different paths. In spite of the impact that MERCOSUR will have on some Uruguayan agribusiness industries very limited research has been carried out in the area. Moreover, there is not much research that has attempted to use traditional business models to analyse the competitiveness of Uruguayan agriculture industries. The interdisciplinary approach adopted by this study contributes to the body of literature that has tried to marry two perspectives: agronomic practices and business theories.

This research is of special significance to Uruguay. It addresses an issue that has never been addressed before, namely the MERCOSUR Union: the competitiveness of the Uruguayan broiler industry. The policy recommendations developed in this study would help not only Uruguayan broiler firms. It is anticipated that the results of this study will be also beneficial to other agribusiness industries that will also have to compete with Brazilian and Argentinian firms once the protection barriers are lifted.

Considerations for Future Research and Limitations

It has become evident how significant it is to understand the impact of regional agreements on domestic industries belonging to small developing countries such as Uruguay. It would be important to gain a deeper understanding of the impact that MERCOSUR will have on other agribusiness sectors, such as wine, that will also face competition from much larger producers from Brazil and Argentina.

It would be also interesting to replicate this study in an operating MERCOSUR without barriers. This would allow a test of whether Porter's diamond framework works in a regional context in South America or not.

Another area that requires further research is the impact of regional agreements in customs unions, where all integrants are developing countries. Collected data shows that even though some economic parameters have improved, this economic growth went hand in hand with the deterioration of some social conditions. Therefore, if social parameters are taken into consideration, the benefits of regionalism are not evident in this union.

Similarly, there is little research about the relationship between environmental politics and regional trade agreements in a customs union where all participants are developing countries, as in MERCOSUR. So far, the economic development of the region has created many environmental disasters linked to large-scale infrastructure projects and to the increase of export industries. This is an area that requires further investigation.

Some of the considerations for future research mentioned above would tackle the main limitation of this research. This study was based on evidence from one industry case-study analysis. This seems to be the main limitation of the research as conclusions were drawn from evidence of one industry. Even though the conditions of the few Uruguayan agribusiness industries that still enjoy the benefits of trade barriers are very similar to the industry targeted in this research, extending the study to more industries would have made the results of this paper more generalizable.

Reflection

For me this PhD has been a journey of much more than three years of hard work. This thesis is to some extent a reflection of who I was, who I am, and where I am going. I believe that our academic background, our previous work experiences, and our culture are all factors that have a strong influence in the way we act, in the way we approach problems, and in our analytical capability. This is why I believe that this PhD is a completion of an academic journey that started almost 20 years ago.

As an agronomist, my scientific background comes to light in many parts of this study. Even though my first degree is a technical one, I have been always interested in what happens beyond the production of a commodity. After becoming an agronomist I wanted to know more about the whole food chain and the impact of external factors. With that in mind I completed a Postgraduate Diploma in Agro industrial Management and then an MBA in Agribusiness Management. Both these academic experiences allowed me to incorporate concepts such as economics, marketing, business strategy, and human resources into my thinking. This postgraduate experience changed my way of thinking about agriculture businesses. No longer I would think that the role of a professional involved in agriculture production was only to increase the number of units per hectare. The story is much more complicated and interesting than this. There are multiple factors that must be taken into consideration while analysing the productivity of any agriculture business. It has also to be noted that in the current competitive market there are many different agents, whose preferences are ambiguous and the surroundings uncertain. The Uruguayan chicken industry provides a vivid example of the complexities and numerous external and internal forces affecting the feasibility of an industry.

The MBA in the UK also gave me the chance to discover themes that at that moment were novel in my country. For the first time I heard about sustainable development, and the importance of environmental issues for agricultural businesses. I became interested in the role that environmental issues would play in the agriculture arena and I decided to undertake a MSc in Environmental Studies. Finally, the PhD has given me the opportunity to integrate in one piece of work all the knowledge and skills that I have gained during my academic career and this is the reason why I think that this research has been the completion of a journey that started a long time ago.

I came to the UK with a very clear idea of what I wanted to research into and how I wanted to do it. Nevertheless, after the first meeting with my supervisors I realised that my original idea was incomplete, as I have not considered the generation of new knowledge which is one of the objectives of any PhD. Looking back at that moment I could not be happier about the way my supervisors helped me to redirect my research approach without compromising the topic I was interested in. The process of generating new knowledge has been one of the most interesting things that I have learnt from this experience. I have also learnt more about how to defend arguments and the importance that methodology plays in all research. The more I read about methodology, the more I realized that there is not much sense in taking a side in the fervent debate of qualitative versus quantitative. I have learnt that at the end, both methodologies pursue the same objective and they can complement each other. As researchers we have to be opened to consider the best methodology for a particular study, we have to be able to justify why the research is conducted in a certain way, and to justify the selected approach for data analysis. Above all I understood that in social science there is not a unique answer or a best method. As one of my supervisors told me in one of our discussions 'I am not worried about the methodology you use as long as you explain the arguments that support your decision'.

Data collection was one of the most challenging parts of this research. I never thought that it would be so difficult and time consuming to gather the required information to conduct an industry analysis within the broiler sector. To start with, I thought that Uruguayan government organizations would have accessible published material related to the Uruguayan broiler industry. I assumed that because of my previous experience as consultant, I have would not have any problems to access data in other industries, such as beef or crops. Even though there are no publicly available data on chicken production, government institutions have conducted some studies of the Uruguayan broiler industry. It took a lot of time to identify those departments that might have those reports. Once the researcher identified the departments that had been involved with the production of broiler data, he managed to interview government employees that have been involved with the targeted industry. For moments it was quite frustrating to try to overcome the bureaucracies of a developing country as Uruguay just to get a simple report.

The second challenge was to get access to the owner-directors of broiler companies. However, it helped a lot that the researcher knew one of the owner-directors of one

company. The researcher realized later that without the help of this person it would have been almost impossible to access the owner-directors of Uruguayan broiler companies who are reluctant to give interviewees or share company's information with people they do not know. Also, as explained in the methodology chapter, the owner-directors of Uruguayan broiler firms feel they are very important persons and they would not easily shared their time with people that do not belong to the same social class.

I would like to draw attention to the fact that there were moments of tension while writing this thesis. For some moments the agronomist that is inside me tried to control the work, in other moments was the business person and in others the environmentally friendly one. With the help of my supervisors I have managed to integrate all my knowledge in one piece of work and hopefully to present it coherently. I believe that to some extent this PhD reflects the evolution of my critical thinking. This study gave me the chance to see the whole picture and to understand all the factors that play a role in a particular industry. It was very interesting for me to dig into an industry and to unveil the reasons of competitiveness. In doing so, I believe that I have gained the ability to conduct an industry level analysis and to develop new knowledge.

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APPENDICES

Appendix 1

Interview structure plan (English version)

A. General

1. Could you give me some background detail on the history of the company such as year of foundation, how the business started and legal status?
2. What is your position at this establishment? Could you tell me something about your background and experience in the context of this company?
3. Are the owners of the company involved in decisions concerned with operational management and strategic management? What is the educational background of them?
4. What is the level of vertical integration of the industry? What is the level of concentration of the industry?
5. What is the current market share of the company?
6. What have been the main changes of the firm business over the past ten years?
7. What are the main factors that have constrained a major development of this company's business?
8. Has this company developed a strategic plan to face the eventuality competition from other members of MERCOSUR?

B. Factor Conditions

9. Has the company been involved in research with either private or public institutes?
10. Does the company offer an employee training and development programme?
11. How suitable do you consider is the national supply of management staff and labour to poultry?
12. Where does the production technology utilised by the firm is sourced from?
13. How important have been the influence of recent domestic economic developments to your company progress?
14. How important are the following location issues to the company's activities?
    - Near to poultry farmers;
    - Near to markets;
    - Close to rivals;
    - Near to where management/owners live;
    - Able to take advantage of promotion incentives targeted at a local area;
    - Excellent infrastructure;
    - Good local community and social facilities;

C. Demand Conditions

15. How would you describe the market for poultry products over the last 10 years? What has been the rate of growth?
16. How would you rate the importance of the home demand compared to the demand in foreign markets?
17. What percentage of the Uruguayan meat market does poultry account for?
18. Could you tell me some general aspects about your customers, such as:
    - Where are they located?

- What type of customers do you have?
- Do Uruguayan consumers have particular requirements on the characteristics of the chicken they look for?
- Do you have a few key customers or many small ones?
- How closely do you liaise with your customers in order to respond to their needs?
- What do you find customers most demanding about the company's product? Example: price, innovation, quality, lead delivery times, reliability, etc.
- What is the company's product marketing strategy to attract customers?

D. Domestic Rivalry

19. How strong is rivalry amongst existing competitors? What form does it take? Example: price, quality, reliability, product performance, advertising, etc.
20. Is the threat of new entrants (either from new firms or international subsidiaries) to the industry of concern to the incumbent firms? Is there any form of retaliation against new competitors?
21. Do you worry about the threat of substitute products from other companies displacing your products?

E. Firm Strategy

22. What is the technical background and professional experience of the managers of the company?
23. Where does the emphasis in the firm's strategy lie? Example: products (cost/quality), processes, marketing, etc.
24. What are the main objectives of the company?
25. How important is the company's reputation in gaining market share?
26. How would you describe the attitudes of workers of the company toward management and vice versa?
27. Does the firm have any clear employment strategy? Has the company set up a share incentive plan?

F. Related and Supporting Industries

28. What suppliers are the company dependent on? Could you describe: number of suppliers, location, working relationship with them, and most important things valued in a supplier.
29. Does the company operate with local suppliers, foreign suppliers, or both? Do the local suppliers serve foreign markets?
30. Are there related firms on which the company is dependent on? Could you specify: number, location, and what do they produce.
31. How suitable to the company is the general support of financial institutions?

G. Government Policy

32. Has the company secured any government grants?

33. Has the company received any advice from government bodies that may have helped the company to progress?
34. Do you think government policy helps poultry firms to be successful?
35. Has the government implemented any programme to disseminate cutting edge technology?

H. Chance

36. Have there been any chance events, which have had a significant impact on the progress of your company?

I. Final Comments

37. Is there anything else you would like to add that it has not been covered in this interview?

Appendix 2

Interview structure plan (Spanish version)

A. General

1. ¿Podría describir a grandes rasgos la historia de la compañía, incluyendo año de fundación, como empezó el negocio y el estatus legal de la misma?
2. ¿Qué tipo de funciones usted desempeña dentro de la empresa? ¿Con que estudios cuenta y cual es su experiencia dentro del sector avícola?
3. Hasta que punto los dueños de la empresa están involucrados en la toma de decisiones estratégicas del negocio. ¿Con que nivel de estudio cuentan?
4. ¿Cuál es el nivel de integración vertical de su empresa, es decir cuantos eslabones controlan desde la producción a la venta?. ¿Cual es el grado de concentración de la industria, esta dominada por una o dos empresas fuertes o se divide el negocio equitativamente entre todas las empresas presentes?.
5. ¿Qué porción de mercado tiene su empresa?
6. ¿Cuáles diría que son los principales cambios que realizo la empresa en los últimos 10 años?
7. ¿Cuáles son los principales factores que han limitado el desarrollo de su empresa?
8. ¿Ha pensado la empresa en algún plan estratégico para competir en un MERCOSUR sin barreras?

B. Factor Conditions

9. ¿La empresa realiza investigación por su cuenta o asociada a algún organismo publico o privado?
10. ¿Tiene la compañía algún programa de capacitación y desarrollo para sus empleados?
11. ¿A su criterio existe en Uruguay gente capacitada para trabajar en el sector avícola tanto en cargos primarios como gerenciales?
12. ¿Dónde se compra la maquinaria utilizada en las granjas y para el procesado de las aves?
13. ¿Recientemente ha habido alguna mejora de la infraestructura del país que haya beneficiado a su empresa?
14. Que tan importante es para el desempeño optimo de la empresa:
    - Estar cerca de los productores de aves
    - Estar cerca de los mercados de consumo
    - Próximos a la competencia
    - Cerca de donde viven los directivos de la compañía
    - Cerca de zonas que ofrezcan incentivos para la producción
    - Cercanos a lugares de buena infraestructura
    - Ubicarse en un lugar que ofrezca buenos servicios sociales (bancos, hospitales, centros de estudio, etc.)

C. Demand Conditions

15. ¿En los últimos años el consumo de carne de ave ha aumentado o disminuido? ¿Cómo describiría la evolución del mercado?

16. ¿Qué importancia tiene para la industria Uruguaya la exportación de carne de pollo?
17. ¿Qué porcentaje ocupa el consumo de carne de pollo comparativamente al consumo total de carne en Uruguay?
18. Podría comentar los siguientes puntos referidos a sus clientes:
    - Donde se encuentran ubicados (geográficamente)
    - Que tipo de clientes tiene (minoristas, grandes supermercados, organismos del estado, etc)
    - Tienen los consumidores Uruguayos algún requerimiento especial por el tipo de pollo que consumen
    - La empresa cuenta con grandes clientes con los que negocia volúmenes importantes o muchos clientes de menor importancia relativa
    - Realiza la empresa algún tipo de estudios para detectar las nuevas tendencias de los consumidores
    - Que es lo que sus clientes valoran a la hora de negociar con su empresa: precio, innovación, calidad, plazos de entrega, etc.
    - Cual es la estrategia de la compañía para aumentar su cartera de clientes.

D. Domestic Rivalry

19. ¿Qué tan competitivo es el sector avícola? ¿Qué tipo de forma toma la competencia: precio, calidad, publicidad, etc.?
20. ¿Existe preocupación en el sector por la posible entrada de nuevos competidores? ¿Existen represalias de algún tipo contra nuevos competidores?
21. ¿Tiene alguna preocupación con respecto a de que algún producto substituto pudiera afectar negativamente el consumo de pollo?

E. Firm Strategy

22. Podría comentarme acerca del nivel de estudio y trayectoria de los gerentes de la empresa
23. ¿Hacia adonde apunta la estrategia de la empresa? Ejemplo: a hacerse mas competitiva mejorando precios, la calidad y variedad de sus productos, el marketing, etc.
24. ¿Cuáles son las principales metas de la empresa?
25. ¿Qué tan importante es la reputación de una empresa avícola a la hora de tratar de crecer en el mercado?
26. ¿Cómo describiría las relaciones entre el personal y los gerentes de la empresa?
27. ¿Tiene la empresa alguna estrategia para contratar sus empleados? ¿Tiene alguna política de incentivos para con el personal?

F. Related and Supporting Industries

28. ¿Con que tipo de proveedores trabaja la empresa? ¿Podría describir el numero, ubicación, relación de trabajo y que tipo de cosas buscan a la hora de seleccionar un proveedor?
29. ¿La empresa trabaja con proveedores locales, extranjeros, o ambos? ¿Tiene conocimiento si alguno de sus proveedores locales exporta?

30. ¿Aparte de los proveedores existen otras empresas (consultoras, gobierno, de publicidad, etc.) con las que mantengan vínculos que afectan al negocio? ¿Podría especificar numero, ubicación, y que producen?
31. ¿Qué tan adecuado considera es el soporte financiero ofrecido por el sistema bancario Uruguayo para la industria avícola?

G. Government Policy

32. Ha obtenido esta empresa en particular algún beneficio del gobierno Uruguayo
33. ¿Existe algún organismo estatal que haya asesorado favorablemente a su empresa?
34. ¿La política gubernamental ayuda al éxito de las empresas avícolas?
35. ¿Existe algún programa del estado que apunte a divulgar la tecnología de punta relacionada a la producción avícola?

H. Chance

36. ¿Ha habido algún hecho aleatorio que pudiera haber tenido un impacto significante en el crecimiento de su empresa o el sector avícola?. Ejemplo, para Brasil la fiebre avícola abrió muchos mercados.

I. Final Comments

37. Desea agregar algo más que considere relevante para el sector y que no haya sido tratado en la entrevista.

Appendix 3

Transcript of interview with owner-director. Avicola del Oeste (English version).

A. General

1. Could you give me some background detail on the history of the company such as year of foundation, how the business started and legal status?

   Most Uruguayan broiler firms are family-owned businesses and Avicola del Oeste is not the exception. Four people with family-bonds that had a breeding farm each decided to integrate their businesses in order to cut down costs. The integration process continued to the point that all farms commercialized their production as one entity. Then, and considering that poultry in Uruguay is an activity of many stages which generates low rates of return per link all partners decided to fully integrate the business. Since that moment they managed sanitary issues as a single business, bought reproducers together, used the same incubation plant, elaborated feed rations for all farms, etc. Therefore, they ended operating as one vertically integrated company with its own: reproducers, incubation plant, breeding farms and distribution channels. It could be said that the company started to operate in 1981 under a S.A. legal status. All shares belong to the same family group.

2. What is your position at this establishment? Could you tell me something about your background and experience in the context of this company?

   I am the owner-director of the company and I am immersed in all day to day decisions of the business. For instance, one day I am taking decisions about a marketing campaign and the following day I am in the production part of the business. I attended up to the fourth year of high school but I never undertook the final exams. After that I started to work. Even though the company was founded about 26 years ago I have been involved in poultry for at least 35 years. My parents were chicken growers, although, at that time the business was much undeveloped. Since I was very young poultry was a topic of conversation in my house.

3. Are the owners of the company involved in decisions concerned with operational management and strategic management? What is the educational background of them?

   The four owners of this company are fully engaged in all the decisions of the business. The level of education of them is quite low as none of them have University or technical degrees. However, all of them have vast experience within the poultry sector. Agronomists and Veterinaries are consulted for specific technical and sanitary decisions.

4. What is the level of vertical integration of the industry? What is the level of concentration of the industry?

Our company controls all the links of the poultry chain but the production of grains. We buy inputs and grains and from there we control the production up to the point of sale. Therefore, it could be said that this is a vertically integrated company.

The poultry market is split among seven firms. Even though there is not a leader there are two companies (Pollos Tenent and Calpryca) that have the biggest share of the market. However, if any of the incumbent firms decide to drop the price of sale then the entire poultry market is affected. The seven poultry companies are: Avicola San Bautista, Avicola Calpryca, Pollos Tenent, Avesur, Avicola del Oeste, Avicola del Remanso, and Avicola Frontini.

As in most countries the egg and poultry meat sector operates separately in Uruguay. In the egg sector there is only one company that is fully integrated controlling the 12% of the market. The rest are independent producers. The egg industry is undergoing a process of concentration. In the broiler sector the story could be summarised as follows: there was a company that controlled 60% of the market. When this company went to bankruptcy several companies have unsuccessfully tried to become the leader of the industry. This is a particular moment because one of the big Argentinian poultry players has decided to target the Uruguayan market. Tres Arroyos is an export orientated company that is undergoing the process of incubating the reproducers. Uruguayan poultry producers have not yet matched the standards of quality achieved by Moro. In fact the levels of automatization and quality control were much better in Moro than in any other of the firms currently operating in the poultry industry.

5. What is the current market share of the company?

   It is very difficult to tell but we estimate that we have the 13% of the market.

6. What have been the main changes of the firm business over the past ten years?

   The main change has been a reduction of costs of production that was to some extent forced by disloyal competition. Nowadays this unfair competition has disappeared thanks to strong actions taken by the government. In the past some poultry companies evaded taxes and because of that they were able to harvest bigger profits and to offer better prices. Our company was forced at that time to drastically cut down costs to remain competitive against these disloyal rivals. The other change has been a steady but slow increase in production output.

7. What are the main factors that have constrained a major development of this company's business?

   The main factor that has constrained the development of our company has been the very limited access to credit. The second factor has been tax evaders firms, and disloyal competence. For a while the business was for some firms to evade taxes rather than produce chicken.

8. Has this company developed a strategic plan to face the eventuality competition from other members of MERCOSUR?

No, we have not because it is something that we see as happening in the long term. In fact Uruguayan broiler companies are putting pressure to keep the barriers in place because grains such as corn, sorghum, etc. that represents 70% of production costs are much cheaper in Argentina. For example a tonne of corn costs $ 75 in Argentina and $ 140 in Uruguay. Therefore, with this difference in prices it would be very difficult to compete. There is a risk that an Argentinian poultry firm will start to operate in the market. If the barriers fall and this company imports chicken that is produced with corn at $ 75 it would be quite difficult for Uruguayan firms to remain competitive. However, the reality indicates that Uruguay is free of Newcastle, a disease that is endemic in Argentina and Brazil. This Uruguayan disease free status allows Uruguay to keep the sanitary barrier in place.

In the short term the Ministry of Agriculture will conduct a sample to prove that Uruguay is free of Newcastle disease. So far this free condition has been claimed only through random blood test. Until now the comfort of a protected market has not fostered Uruguayan companies to improve. Now with the imminent threat of an Argentinian big poultry player Uruguayan companies will have to improve their quality standards or they will inevitably lose market share.

B. Factor Conditions

9. Has the company been involved in research with either private or public institutes?

The firm has not been involved in research with private or public institutes. Our company buys technological packages from abroad. The problem is that these packages are developed taking into account the particularities of the countries in which they are produced. What has been developed in Uruguay it was not thanks to University research but the efforts of some technicians that have had the ability to adapt foreign techniques to the particularities of Uruguay. For instance, Uruguay was the first country to feed broilers with a ration containing 65% of sorghum when first scientific studies where recommending to replace up to 20% of corn with sorghum. Uruguayan technicians experimented with higher percentages of sorghum into the ration due to the lack of corn and the excellent conditions of Uruguay to grow sorghum. Uruguayan broiler companies have given a lot of important to economic aspects. For instance, German studies indicate that the use of more than 150 kg of meat-bone flour per ton of ration results in the brake of 2% of egg shells because of the big amount of phosphorus contained in meat-bone flour. In spite of this some Uruguayan broiler firms have incorporated more than 150 kg of meat-bone flour because savings on ration more than compensate the lost of broken eggs.

10. Does the company offer an employee training and development programme?

Avicola del Oeste does not offer an employee training and development programme. In particular circumstances veterinaries of the company has been sent to undertake courses related to sanitary issues. The idea of the company is to hire employees that have already developed the skills to work in the poultry industry. At present we are facing the problem that new graduated technicians lack the skills to work in the industry. This has happened because of a change in the academic program of the University of the Republic where poultry is not a core unit any

more. The current technicians are more than 50 years old and there are not qualified people to take over their positions.

11. How suitable do you consider is the national supply of management staff and labour to poultry?

    I believe that there is a lack of qualified human resources. There was a very good bunch of technicians but that generation is about to retire and the University has not been able to provide the industry with qualified technicians since a long time ago. Moreover, the public University does not offer courses in management and therefore, those managers with training in management/business strategy are very difficult to find. Most managers do not understand professionalism.

12. Where does the production technology utilised by the firm is sourced from?

    Processing and industrial poultry machinery is sourced from Brazil. On rare occasions the company sourced poultry machinery from Holland. In the domestic market there are some companies that copy the Brazilian machinery. I am aware that the competence either copies the models from online or sends engineers to copy Brazilian machinery that then is produced in Uruguay.

13. How important have been the influence of recent domestic economic developments to your company progress?

    There have not been recent domestic economic developments that have helped the development of our company. In fact infrastructure is limiting to some extent the development of the company. For instance, Uruguay lacks ports to import grains at prices that would allow domestic firms to improve competitiveness against their neighbours. The first problem of the Uruguayan port structure is the lack of mill capacity. The mill's capacity of Nueva Palmira would not constraint poultry demands for grain but the cost of transporting the grain from Nueva Palmira to the main areas of poultry production make this option unfeasible. The second problem is that Uruguayan ports are not deep enough to accommodate large cargo ships. Uruguay produces 30 millions of broiler breeders that can be fed with six large cargo ships.

14. How important are the following location issues to the company's activities?

    - Near to poultry farmers. It is vital to be close to farmers to manage the breeding, handling, feeding, and sanitary issues. The company must be close to the contract grower to be competitive.
    - Near to markets. Part of the company needs to be located close to the largest market. This is the only way to detect new trends and what consumers look for.
    - Close to rivals. I believe that it is beneficial for the business to be close to the competence. Sadly, many companies have practised disloyal competition which has not been helpful for the industry. The sector has regular meetings to agree different things such as minimum price of sale. The problem is that many companies do not respect these agreements. A

loyal competence would have helped to further develop this industry but I see this very difficult because of the idiosyncrasy of Uruguayans.

- Near to where management/owners live. I believe that it is not relevant for the success of the business to have the company close to where the directors live.
- Able to take advantage of promotion incentives targeted at a local area. This is irrelevant as Uruguayan provinces do not offer promotion incentives.
- Excellent infrastructure. I believe this is very important because the success of the business relies on a good transportation network. Big trucks must reach poultry farms to deliver ration from silos.
- Good local community and social facilities. This has never been considered by the company.

C. Demand Conditions

15. How would you describe the market for poultry products over the last 10 years? What has been the rate of growth?

    The consumption of chicken has increased mainly because of favourable price relations and the new tendency to eat healthier which positions chicken over red meat. I estimate that the current consumption is of 20 kg *per capita*. The consumption diminished during the crisis of 2002 but it recovered very fast and from 2004 there has been a big increase of chicken consumption due to a favourable price scenario against beef. The increase of beef prices has been capitalized by the poultry sector as fish and pork are expensive in Uruguay.

16. How would you rate the importance of the home demand compared to the demand in foreign markets?

    Uruguay exports but the volumes are insignificant compared to the volumes consumed in the domestic market. We are talking of no more than four containers a year to undemanding markets such as Venezuela. Uruguay has also exported to Angola, Haiti, and Congo basically because there are Uruguayan military forces in those countries. Our company does not export and it is entirely focused to the domestic market. We are aware that our costs of production are above our neighbours from Brazil and Argentina.

17. What percentage of the Uruguayan meat market does poultry account for?

    The consumption of chicken in Uruguay occupies the second place quite behind beef but quite above pork and fish.

18. Could you tell me some general aspects about your customers, such as:

    - Where are they located? Most of our customers are located in Montevideo, Ciudad de la Costa, and Maldonado. These places concentrate the largest number of consumers with spending power.
    - What type of customers do you have? We do not sale to government organizations, our largest customers are supermarkets that day after day are gaining more power. In fact they have absorbed even butcher's shops.

- Do Uruguayan consumers have particular requirements on the characteristics of the chicken they look for? Uruguayan consumers prefer a heavy chicken weighting at least 2.8 kg. They do not like frozen chicken. they prefer fresh chicken. Another characteristic that it is of concern for Uruguayan consumers is the colour of the skin which it is associated with the health of the bird. This differs with other markets such as Arabia where consumers look for a chicken without colour.
- Do you have a few key customers or many small ones? Supermarkets account for 70% of our business, small retailers 20% and poultry shops 10%.
- How closely do you liaise with your customers in order to respond to their needs? The company does not conduct market research to detect new consumer needs. We trust on owner's knowledge of the market.
- What do you find customers most demanding about the company's product? Example: price, innovation, quality, lead delivery times, reliability, etc. Most supermarkets put emphasis on price. However, few customers prioritise quality over price.
- What is the company's product marketing strategy to attract customers? The main strategy is to excel on quality, delivery times, and freshness.

D. Domestic Rivalry

19. How strong is rivalry amongst existing competitors? What form does it take? Example: price, quality, reliability, product performance, advertising, etc.

    This is a very competitive sector. Rivalry is mainly expressed in the form of price. Our company is putting a lot of effort on quality that is the second form of competence.

    Sadly competence is hard and disloyal. For instance, there are meetings attended by representatives of all poultry firms to agree sales price. However, some companies do not respect these agreements.

    There are only two companies that invest on advertising. Avicola del Oeste advertises the quality of its chickens emphasising the natural way of fattening. Calpryca is the other company that invests on advertising being present in more advertising channels than our company.

20. Is the threat of new entrants (either from new firms or international subsidiaries) to the industry of concern to the incumbent firms? Is there any form of retaliation against new competitors?

    There is a great concern for the entrance of new firms. Some years ago an Argentinian poultry firm (Cresta Roja) entered the market through an acquisition of a small domestic firm facing financial problems. The incumbent firms took a lot of measures to make its life more complicated. Cresta Roja aimed to import grain from Argentina but domestic firms took measures to ensure that it would not happen.

Currently there is a great concern for the entry of a big Argentinian poultry firm. This is one of the big players with the capacity to change the rules of the game.

21. Do you worry about the threat of substitute products from other companies displacing your products?

    I do not worry because our competitor is asado and nowadays the price relation is favourable to chicken. Other meat chains have not been developed in Uruguay. Fish and pork are very expensive and their chains have not been consolidated as in other countries.

E. Firm Strategy

22. What is the technical background and professional experience of the managers of the company?

    In general most managers have poor education but a lot of experience within the poultry sector. In rare occasions you can find a manager with some kind of basic qualifications in marketing.

23. Where does the emphasis in the firm's strategy lie? Example: products (cost/quality), processes, marketing, etc.

    We would like to become more competitive in price and at the same time improve the quality of our products. At the moment the company is focused to create new products and chicken ready meals. It is fair to say that the elaboration of these products is at an infant stage.

24. What are the main objectives of the company?

    In the short term to increase the number of customers, and in the long term to become the market leader.

25. How important is the company's reputation in gaining market share?

    The reputation does not play an important role in gaining market share because neither supermarkets nor small retailers look at reputation to select a firm. However, if reputation is understood as respect for agreements in terms of quality and delivery times it plays a role in gaining market share. Supermarkets value those firms with a reasonable price policy. Some firms have lost market share because of their aggressive price policy.

26. How would you describe the attitudes of workers of the company toward management and vice versa?

    There is a very good relation between owner-directors and employees. This relation is based on mutual respect. Conversely, the competence does not have very good relations with their employees. For instance, Avesur has its abattoir occupied because of a salary conflict. Even though our company has good work relations

with all employees there are some moments of tension. One of these moments is the negotiation for the price per kilo paid to contract growers (faconeros).

27. Does the firm have any clear employment strategy? Has the company set up a share incentive plan?

    This company does not have an employment strategy. We recruit the best we can but there are not many chances because of the lack of a qualified labour force. The company offers incentive packages to the personnel working in the commercial department of the firm.

F. Related and Supporting Industries

28. What suppliers are the company dependent on? Could you describe: number of suppliers, location, working relationship with them, and most important things valued in a supplier.

    The company works with a big number of suppliers. The poultry industry works with a lot of input suppliers that are located in the capital and south provinces of the country. Suppliers are selected on the basis of quality and price.

    Working relationships with suppliers vary according to the product. The company tends to develop long term and trustful working relationships for some inputs such as vitamins and poultry medicines. Meat bone-flour is purchased to the same two or three abattoirs. What it varies a lot are the suppliers of grains that are selected purely on price basis.

29. Does the company operate with local suppliers, foreign suppliers, or both? Do the local suppliers serve foreign markets?

    Avicola del Oeste operates mainly with domestic suppliers. However, the laboratories that make quality controls are international. As far as I know most of our suppliers only serve the domestic market. We only purchase from foreign suppliers machinery.

30. Are there related firms on which the company is dependent on? Could you specify: number, location, and what do they produce.

    There are not other related firms which we are dependent on. There are no other related firms that might affect the business. At the moment there are not any government or academic institution undertaking poultry research. In fact our company does not have relations with University institutions or government agencies. A long time ago there were academic institutions that offered courses on poultry. However, these courses are not longer available.

31. How suitable to the company is the general support of financial institutions?

    I considered the general support of financial institutions very inadequate. In fact there is not financial support for poultry firms. Public and private banks do not lend money to the poultry sector.

G. Government Policy

32. Has the company secured any government grants?

    Since its very inception Avicola del Oeste has never received any kind of grant or benefit from the government. A long time ago we benefited for a short time from "temporary admission" which was a policy that would allow importing without paying taxes certain goods as long as they were transformed and re-exported or subject to an industrial process. However, this was a policy developed to boost Uruguayan industries that was not developed for the poultry industry in particular.

33. Has the company received any advice from government bodies that may have helped the company to progress?

    No, it has not. The government does not have any department acting as a consulting body. I would say that the only good thing the government has done is to take measures to end with disloyal competence. The government is forcing all poultry firms to compete under equal conditions.

34. Do you think government policy helps poultry firms to be successful?

    Government policy does not help at all. The government should at least play a role in certain areas such as ensuring the free status of Newcastle and influenza disease. It should enact an appropriate regulation. A commission was created in the Ministry of Agriculture to address these issues. However, in five years it only enacted one irrelevant decree. It is inefficient, slow, and the people working in the commission are not qualified to fulfil their responsibilities.

35. Has the government implemented any programme to disseminate cutting edge technology?

    There is not any government program to disseminate cutting edge technology. In very rare occasions the University runs workshops but they are designed to academic attendees and they are very expensive. The government has only one web site that displays domestic poultry products prices.

H. Chance

36. Have there been any chance events, which have had a significant impact on the progress of your company?

    In the poultry sector I would say that government policies aiming to boost beef exports have indirectly benefited our companies. Thanks to these policies chicken meat has become more competitive and has been able to supply those customers looking for cheaper sources of meat.

    Another significant event was the declaration of Uruguay as country free of foot and mouth disease. As a consequence of this, beef exports increased and the internal beef price went up making chicken more competitive. The last chance event was bird flue. As Uruguay is free of bird flue a Uruguayan poultry firm took

advantage of this status to open new markets. However, the lack of cost competitiveness of our company prevented it from exporting.

I. Final Comments

37. Is there anything else you would like to add that it has not been covered in this interview?

I believe that the government should safeguard the good sanitary condition of Uruguay and exploit it. The genetic used by Uruguayan firms is German or American, vaccines and vitamins come from international laboratories, and technological packages are sourced from abroad.

I would like to highlight that while Brazilian and Argentinian poultry firms are benefited from different measures in Uruguay there is not support at all.

Appendix 4

Transcript of interview with owner-director.
Avicola del Oeste (Spanish version).

A. General

1. ¿Podría describir a grandes rasgos la historia de la compañía, incluyendo año de fundación, como empezó el negocio y el estatus legal de la misma?

   La mayoría de las empresas en Uruguay son de origen familiar y esta no es la excepción. Eran cuatro personas con lazos familiares que tenia cada uno los criaderos por separado y empezaron a hacer acciones en común no con criterio de cooperativa sino como una forma de abaratar costos y eso les permitía bajar los gatos, comprar en mayor volumen, etc. y eso los llevo a irse integrando de modo de que por ejemplo pasaron a una comercializadora única. Es decir todas las granjas venden a la comercializadora que es la que se encarga de la distribución. Pero a su vez como la avicultura es una actividad de pocas utilidades pero muchos escalones los fue empujando por un lado para mejorar sanitariamente y por otro lado para tener más dividendos a traer reproductoras, planta de incubación, etc. Ellos ya de antes elaboraban la ración. De modo que termino en algo que es una integración vertical con sus propios: reproductores, planta de incubación, sus propias instalaciones de cría y finalmente una comercialización unificada. Podría decirse que la empresa empezó a operar en 1981 bajo el estatus legal de una S.A. cuyas acciones pertenecen en su totalidad al mismo grupo familiar.

2. ¿Qué tipo de funciones usted desempeña dentro de la empresa? ¿Con que estudios cuenta y cual es su experiencia dentro del sector avícola?

   Actualmente soy el director-dueño de la empresa y estoy involucrado en todas las decisiones estratégicas y del día a día del negocio. Por ejemplo un día estoy tomando decisiones de marketing y al otro día estoy en la parte productiva del negocio. Estudie hasta cuarto de liceo pero nunca termine de dar todas las materias y enseguida me puse a trabajar. Si bien la empresa fue fundada hace unos 26 años yo he estado vinculado directamente a la avicultura por lo menos durante 35 años. Mis padres eran criadores de pollos aunque en esa época el negocio todavía no se había desarrollado. De todas formas siempre se hablo de avicultura en mi casa.

3. Hasta que punto los dueños de la empresa están involucrados en la toma de decisiones estratégicas del negocio. ¿Con que nivel de estudio cuentan?

   Los dueños de la empresa están involucrados en absolutamente todas las decisiones del negocio. El nivel de estudio es bajo ya que ninguno cuenta con estudios Universitarios o terciarios. A pesar de ello todos los dueños contamos con amplia experiencia en el sector avícola. Los agrónomos/veterinarios de la empresa son consultados por aspectos técnicos de la producción y sanitarios.

4. ¿Cuál es el nivel de integración vertical de su empresa, es decir cuantos eslabones controlan desde la producción a la venta?. ¿Cual es el grado de concentración de la

industria, esta dominada por una o dos empresas fuertes o se divide el negocio equitativamente entre todas las empresas presentes?

Nuestra empresa controla todos los eslabones, menos lo que es la agricultura. Compramos los insumos y los granos y desde allí controlamos todo el ciclo, se le llamaría una empresa vertical porque tiene todo desde la producción de la ración hasta el punto de venta. Se denomina una empresa vertical.

Se divide el negocio equitativamente nadie es líder, hay siete empresas con diferente porcentaje, aunque se podría decir que los mas fuertes ahora son Pollos Tenent y Calpryca. Si una empresa X te baja el precio te afecta en todo. Los siete productores son: avícola San Bautista, avícola Calpryca, Pollos Tenent, Avesur, Avícola del Oeste, Avícola del Remanso, y Avícola Frontini.

El sector carne y huevo al igual que en la mayor parte del mundo están totalmente separados. En el sector huevo, hay una única empresa que esta totalmente integrada y maneja el 12% del total de las aves, el resto son todos independientes y se esta dando un proceso de concentración. En el sector pollo la historia se podría resumir de la siguiente manera: había una empresa que dominaba el 60% del mercado. Luego esta empresa se funde y surgen una cantidad de criadores independientes a tomar posesión del mercado pero no hay líder definido. Este es un momento particular pues acaba de desembarcar una empresa argentina (Tres Arroyos) rankeada entre las tres empresas más grandes de Argentina y que esta enfocada a la exportación, ahora están incubando los reproductores. Acá se dio una involución, Moro tenía mataderos altamente automatizados y la presentación del pollo era excelente no como ahora que es factible encontrarse pollos con plumas. Increíblemente Moro lograba más eficiencia, por economía de escala y por mejor técnica.

5. ¿Qué porción de mercado tiene su empresa?

   Es bastante difícil de estimar pero creemos que actualmente dominamos aproximadamente un 13% del mercado.

6. ¿Cuáles diría que son los principales cambios que realizo la empresa en los últimos 10 años?

   El principal cambio ha sido la reducción de gastos brutal por la competencia desleal. Ahora se corto con el operativo desplume. Muchas empresas vendían con duplicado de factura, es decir te vendían a vos con una boleta y con la misma boleta le vendían a otro. Entonces no cobraban IVA (en si entre comillas) y por eso era una competencia desleal. Y eso llevo a que nos adecuemos a la situación, reducción de gastos, reducción de personal, y esas cosas. Con respecto a los niveles de producción, han aumentado constantemente pero los incrementos han sido relativamente bajos.

7. ¿Cuáles son los principales factores que han limitado el desarrollo de su empresa?

Factores limitantes el primero es la disponibilidad de créditos. El segundo, los que trabajan en negro, la competencia desleal. El negocio paso a ser para algunos evadir impuestos y no ha producir pollo.

8. ¿Ha pensado la empresa en algún plan estratégico para competir en un MERCOSUR sin barreras?

   No, se ve a largo plazo y el sector avícola de Uruguay lo esta frenando porque los insumos lo que es el maíz, sorgo, etc. que representa el 70% de los costos de producción del pollo, para darte una idea en argentina esta a 75 dólares (maíz) acá esta a 140 dólares (maíz) no podes competir acá adentro, si se abren las fronteras se cierran las empresas de acá. Hay un riesgo que se esta hablando de que puede venir una empresa argentina a instalarse acá y para la empresa nuestra seria improductivo porque se llega a abrir la frontera a 75 dólares el maíz contra 140 que esta hoy en día acá seria imposible competir. Sin embargo el Uruguay es libre de Newcastle, es una enfermedad que esta en Argentina y Brazil, que nos protege y es el fuerte que nos ayuda a no levantar las barreras.

   Ahora lo que se va a hacer con un préstamo del Ministerio es un muestreo de Newcastle para probar que estamos libres de la enfermedad. Hasta ahora al estar en un mercado protegido no había aliciente para mejorar y lo del MERCOSUR no se había pensado seriamente. Ahora con la amenaza inminente de una empresa argentina exitosa las empresas uruguayas tendrán que mejorar o perderán mercado.

B. Factor Conditions

9. ¿La empresa realiza investigación por su cuenta o asociada a algún organismo publico o privado?

   Acá no se hace nada, generalmente se compran paquetes tecnológicos. El problema es que las condiciones productivas de cada país son particulares. Lo que se desarrollo acá no ha sido por investigación de la universidad sino por sentido común de algunos técnicos que han adaptado cosas que vieron en el exterior y lo traducen a las condiciones del país. Ejemplo: Uruguay fue el primer país que alimento pollos con una ración integrada de 65% de sorgo cuando los primeros estudios científicos hablaban de una sustitución de maíz por sorgo del 20%. En Uruguay se hacia porque el mercado no producía en ese entonces suficiente maíz. También es un país que da mucha prioridad a la parte económica. Por ejemplo: los trabajos alemanes indican que no se puede incluir mas de cierta cantidad de harina de carne (150 Kg. por tonelada) porque el fósforo esta hasta tres veces de lo que sugiere, en Uruguay en un mercado protegido las empresas igual lo hacen porque aunque eso ocasione la ruptura del 2% de la cáscara del huevo se compensa por el ahorro de la ración.

10. ¿Tiene la compañía algún programa de capacitación y desarrollo para sus empleados?

    No existen programas de capacitación, en casos puntuales se ha enviado a algún técnico para formarse en algún área que se necesitara pero eran casos excepcionales. La idea de la empresa es contratar empleados que ya están

capacitados para trabajar en la industria avícola. Actualmente estamos enfrentando el problema de que los nuevos técnicos que salen de la Universidad no salen preparados pues la educación que cambio el programa recientemente no forma técnicos adecuados para trabajar en la industria avícola. Los técnicos que trabajan tienen más de 50 años y no hay recambio.

11. ¿A su criterio existe en Uruguay gente capacitada para trabajar en el sector avícola tanto en cargos primarios como gerenciales?

    Creo que hay una carencia. Hubo una camada buena de técnicos que ya están rayando los 60 años que no se renovaron. Falta una generación preparada de técnicos y ni hablar de mandos medios. La universidad no forma mandos medios y no existe ningún curso de estrategia o gerenciamiento. Los escasos gerentes se han tenido que formar pagando cursos privados en otras entidades y es muy difícil encontrarlos, no hay profesionalismo.

12. ¿Dónde se compra la maquinaria utilizada en las granjas y para el procesado de las aves?

    Lo que es maquinaria industria, cosas pesadas se importa de Brasil. Ocasionalmente se importo alguna maquinaria de holanda como ser una saborisadora de pollo. Acá en el mercado hay algunas empresas que copian de Brasil. Eso es muy común en la competencia. Sacan los modelos por Internet y copian o el ingeniero va a Brasil y copia y arma en Uruguay.

13. ¿Recientemente ha habido alguna mejora de la infraestructura del país que haya beneficiado a su empresa?

    No hubo absolutamente nada que hubiera beneficiado a la empresa. De hecho lo que hay son limitantes de la infraestructura que limitan el desarrollo de las empresas. Por ejemplo no hay puertos aptos para importar grano a precios que te permitieran competir con nuestros vecinos. Hay dos problemas el puerto de Montevideo no tiene capacidad de silos, abría que irse hasta Nueva Palmira (imposible por el costo del flete) lo poco que hay se usa para exportar y los barcos de mucho calado no pueden entrar. Obviamente para importar por el costo de los fletes se tendrían que juntar las empresas, que lo veo difícil por la rivalidad. Uruguay produce 30 millones de parrilleros con 6 barcos alimentarías a todos si se pudiera.

14. Que tan importante es para el desempeño optimo de la empresa:

    - Estar cerca de los productores de aves: eso es fundamental para dirigir la crianza, manejo, alimentación y sanidad. Hay que estar cerca del productor para ser competitivo.
    - Estar cerca de los mercados de consumo: una parte de la empresa tiene que estar cerca pues es la salida del producto para poder detectar las tendencias y lo que buscan los consumidores.
    - Próximos a la competencia: creo que un mano a mano con la competencia es beneficioso. Desgraciadamente en Uruguay se dio una competencia

desleal que no favoreció al sector y llevo a que muchos se fundieran. Hay mucho engaño, se consensuaban cosas en reuniones que después no se respetaban. Una competencia sana hubiese ayudado pero es difícil por la idiosincrasia del uruguayo.

- Cerca de donde viven los directivos de la compañía: eso creo que no es relevante.
- Cerca de zonas que ofrezcan incentivos para la producción: acá no ha habido incentivos de ningún tipo.
- Cercanos a lugares de buena infraestructura: eso si es importante, debe de estar en zonas de buena infraestructura de rutas, sobre todo la fábrica de ración. Los camiones necesitan que exista una buena red de camineria pues los camiones que trasladan la ración (a granel) son enormes y es importante que las granjas estén cercanas a la fábrica de ración.
- Ubicarse en un lugar que ofrezca buenos servicios sociales (bancos, hospitales, centros de estudio, etc.): no eso no se tomaba en cuenta en la empresa

C. Demand Conditions

15. ¿En los últimos años el consumo de carne de ave ha aumentado o disminuido? ¿Cómo describiría la evolución del mercado?

    El consumo ha aumentado beneficiado por la relación de precios y las nuevas tendencias a consumir mas sano que posicionan al pollo por encima de las carnes rojas. Estimo que el consumo actual es de 20 kg per. Capita. El consumo bajo en la crisis del 2002, se recupero rápido y desde el 2004 se ha dado un gran aumento por una ventaja en la relación del precio con la carne de vaca. El aumento de la carne de vaca llevo a muchos consumidores a optar por pollo. El resto de las cadenas carnicas no pudieron captar nuevos consumidores porque tanto el pescado como el cerdo son productos mucho más caros en Uruguay.

16. ¿Qué importancia tiene para la industria Uruguaya la exportación de carne de pollo?

    Se exporta pero muy poco, en el entorno de los cuatro contenedores al año y a mercados muy poco exigentes como Venezuela por un convenio particular de los países. También se mandan pollos a Angola, Haití y el Congo básicamente porque hay fuerzas uruguayas en esos países. Nuestra empresa no exporta y se focaliza al mercado interno. Somos concientes que nuestros costos de producción están por encima de nuestros vecinos de Argentina y Brasil.

17. ¿Qué porcentaje ocupa el consumo de carne de pollo comparativamente al consumo total de carne en Uruguay?

    Es el segundo lejos de la carne pero muy encima del cerdo y pescado.

18. Podría comentar los siguientes puntos referidos a sus clientes:

- Donde se encuentran ubicados (geográficamente): la mayoría en Montevideo, ciudad de la costa y Maldonado, allí esta concentrado el consumo y el poder adquisitivo.
- Que tipo de clientes tiene (minoristas, grandes supermercados, organismos del estado, etc): organismos del estado cero, cada vez mas son los supermercados los que controlan las ventas de carne. Los supermercados han absorbido hasta las carnicerías de barrio.
- Tienen los consumidores Uruguayos algún requerimiento especial por el tipo de pollo que consumen: les gusta el pollo grande que pese limpio al menos 2.8 Kg. A su vez no quiere pollo congelado, a lo sumo enfriado. quieren pollo fresco. También se fijan en el color como síntoma de que el pollo esta saludable es que tenga un buen color de piel a diferencia por ejemplo del mercado árabe que busca un pollo sin color.
- La empresa cuenta con grandes clientes con los que negocia volúmenes importantes o muchos clientes de menor importancia relativa: 70% supermercados, 20% minoristas y 10% las pollerias.
- Realiza la empresa algún tipo de estudios para detectar las nuevas tendencias de los consumidores: nosotros no hacemos nada, nos guiamos por lo que los dueños de la empresa pensamos.
- Que es lo que sus clientes valoran a la hora de negociar con su empresa: precio, innovación, calidad, plazos de entrega, etc. Hay ciertos supermercados mas exigentes que priorizan la calidad por sobre los otros parámetros.
- Cual es la estrategia de la compañía para aumentar su cartera de clientes: frescura, rapidez y calidad es lo que priorizamos para ampliar nuestra cartera de clientes.

D. Domestic Rivalry

19. ¿Qué tan competitivo es el sector avícola? ¿Qué tipo de forma toma la competencia: precio, calidad, publicidad, etc.?

    Es muy competitivo y el precio es la forma de competencia más importante. Nosotros además tratamos de diferenciarnos por calidad que es la segunda forma de competencia.

    Desgraciadamente la competencia es muy dura y sucia. Por ejemplo hay reuniones de las empresas del sector para fijar un precio mínimo por kilo que luego a pesar de comprometerse a respetarlo nadie lo cumple. La publicidad se utiliza solo por dos empresas. Avícola del Oeste publicita la calidad de sus pollos focalizando en como sus aves son engordados. Calpryca invierte más en publicidad y esta presente en más medios de comunicación.

20. ¿Existe preocupación en el sector por la posible entrada de nuevos competidores? ¿Existen represalias de algún tipo contra nuevos competidores?

    Si existe preocupación. Estuvo Cresta Roja en Uruguay (avícola Argentina) que compro una de las avícolas que se fundió y tuvieron que retirarse del mercado pues

las empresas uruguayas tomaron todo tipo de medidas para hacer difícil su entrada al mercado. Pretendían importar grano barato de Argentina y producir acá pero se tomaron medidas para que eso no sucediera.

Actualmente hay mucha preocupación por una empresa Argentina que aparentemente se va a instalar en Uruguay. Esta es una de las empresas avícolas más grandes en Argentina con suficiente poder como para cambiar las reglas de juego.

21. Tiene alguna preocupación con respecto a de que algún producto substituto pudiera afectar negativamente el consumo de pollo?

    No porque el competidor del pollo es el asado y hoy por hoy la relación es favorable al pollo. Las otras cadenas no se han desarrollado en Uruguay. El pescado y el cerdo son muy caros y no han logrado consolidar la cadena como en otros países.

E. Firm Strategy

22. Podría comentarme acerca del nivel de estudio y trayectoria de los gerentes de la empresa.

    En general los gerentes no tienen estudio de ningún tipo, si experiencia en la industria. En contadas excepciones se puede encontrar algún gerente con formación básica en marketing.

23. ¿Hacia adonde apunta la estrategia de la empresa? Ejemplo: a hacerse mas competitiva mejorando precios, la calidad y variedad de sus productos, el marketing, etc.

    A hacerse mas competitiva en precio sin descuidar la calidad. Actualmente se esta poniendo énfasis en la creación de nuevos productos, productos mas elaborados, aunque se esta en una etapa incipiente.

24. ¿Cuáles son las principales metas de la empresa?

    En el corto plazo aumentar la cartera de clientes y en el largo plazo transformarse en el líder del mercado.

25. ¿Qué tan importante es la reputación de una empresa avícola a la hora de tratar de crecer en el mercado?

    No pesa la reputación sino entra una empresa entra otra. Ni la gente ni los supermercados se fijan en eso. Sin embargo a la hora de ganar mercado la reputación entendida por entregar lo prometido en los plazos acordados es apreciada. Se valora también la seriedad de la política de precios. Hay empresas que perdieron mercado por su forma comercial muy agresiva.

26. Cómo describiría las relaciones entre el personal y los gerentes de la empresa?

Hay una muy buena relación con el personal, mucho respeto. En la competencia las relaciones no son tan buenas. Ejemplo: Avesur tiene ocupada la planta debido a un conflicto salarial con el personal. Si bien hay una buena relación con todos los empleados hay momentos de tensión como por ejemplo cuando se negocia el precio por kilo a pagar a los faconeros.

27. ¿Tiene la empresa alguna estrategia para contratar sus empleados? ¿Tiene alguna política de incentivos para con el personal?

    No existe estrategia de ningún tipo se selecciona dentro de lo que puede y no hay muchas opciones por la falta de personal calificado. Hay incentivos de venta para los empleados vinculados al sector comercial.

F. Related and Supporting Industries

28. ¿Con que tipo de proveedores trabaja la empresa? ¿Podría describir el numero, ubicación, relación de trabajo y que tipo de cosas buscan a la hora de seleccionar un proveedor?

    La empresa trabaja con un número muy grande de proveedores. La industria avícola trabaja con muchos proveedores para la parte de insumos que se ubican tanto en la capital como en el interior del país. Los mismos son seleccionados en base a calidad y precio.

    Las relaciones con los proveedores varían de acuerdo al tipo de producto, generalmente para vitaminas, vacunas, etc, trabajan con un proveedor de mucho tiempo, se basan en relaciones de confianza. Para la harina de carne compran a los frigoríficos pero no varían mucho, por lo general le compran a dos o tres mismos frigoríficos. Lo que varían mucho son los proveedores de granos para los cuales se selecciona exclusivamente en base a precio.

29. ¿La empresa trabaja con proveedores locales, extranjeros, o ambos? ¿Tiene conocimiento si alguno de sus proveedores locales exporta?

    La mayoría de los proveedores son locales pero los laboratorios que realizan los controles de calidad son internacionales. Sus proveedores venden solo en el mercado interno. Se trabaja con proveedores extranjeros para la parte de maquinaria.

30. ¿Aparte de los proveedores existen otras empresas (consultoras, gobierno, de publicidad, etc.) con las que mantengan vínculos que afectan al negocio? ¿Podría especificar numero, ubicación, y que producen?

    No hay otras empresas con las que mantenemos vínculos y que pudieran afectar el negocio. En estos momentos no hay ninguna oficina del gobierno o de la enseñanza que haga extensión. No existen vínculos de ningún tipo con la enseñanza o el gobierno. En un momento había instituciones de educación terciaria que preparaban gente para desempeñar cargos en la industria avícola. Hoy por hoy esos cursos ya no se dictan.

31. ¿Qué tan adecuado considera es el soporte financiero ofrecido por el sistema bancario Uruguayo para la industria avícola?

    Los bancos no les prestan a los avicultores, no hay crédito bancario

G. Government Policy

32. Ha obtenido esta empresa en particular algún beneficio del gobierno Uruguayo.

    No absolutamente nada. En un tiempo existió la admisión temporaria que permitía importar insumos sin pagar impuestos para productos destinados a la exportación pero eso desapareció.

33. ¿Existe algún organismo estatal que haya asesorado favorablemente a su empresa?

    No, no existe. Lo que ven como favorable son las acciones que tomo el gobierno para eliminar la competencia desleal. Se esta a obligando a todas las empresas a competir en igualdad de condiciones.

34. ¿La política gubernamental ayuda al éxito de las empresas avícolas?

    No ayuda en absolutamente nada. El gobierno debería al menos intervenir en la macro planificación, por ejemplo mantener el país libre de influenza, libre de Newcastle, tener una reglamentación adecuada. Existe una comisión mixta que en 5 años saco un solo decreto, es todo muy lento y falta gente capacitada en el ministerio para desarrollar esas tareas.

35. ¿Existe algún programa del estado que apunte a divulgar la tecnología de punta relacionada a la producción avícola?

    No existe un programa establecido para divulgar tecnología. La universidad tiene cursos muy limitados y dirigidos a los académicos de la Universidad. Si bien no esta limitado son muy pocos los que acceden y son jornadas pagas. La única información que brinda el estado es el precio de los productos en el mercado interno.

H. Chance

36. ¿Ha habido algún hecho aleatorio que pudiera haber tenido un impacto significante en el crecimiento de su empresa o el sector avícola?. Ejemplo, para Brasil la fiebre avícola abrió muchos mercados.

    En el sector avícola fueron las políticas de gobierno que impulsaron la exportación de carne vacuna. Eso llevo a que el pollo se hiciera más competitivo y a que pudiera cubrir los huecos de demanda que dejaba la carne vacuna.

    Otro aspecto importante fue la declaración de Uruguay como país libre de aftosa. A consecuencia de ello aumento la exportación y el precio interno de la carne vacuna mejorando una vez más la competitividad del pollo. Recientemente fue la influenza

aviar. Este fue un factor positivo (Uruguay esta libre) pero que no se pudo explotar por nuestra empresa por la falta de competitividad de precio.

I. Final Comments

37. Desea agregar algo más que considere relevante para el sector y que no haya sido tratado en la entrevista.

    Lo que hay que hacer hincapié en que la sanidad es muy buena en Uruguay y abría que explotarlo. La genética acá es alemana o americana, las vacunas y vitaminas son internacionales, el Uruguay compra paquetes tecnológicos y tiene la capacidad de adaptación.

    En Argentina y Brasil el sector avícola es apoyado de diversas formas y en Uruguay no existe ayuda de ningún tipo.