ABSTRACT

Over the past century, the tuna canning industry has been dominated by a few big companies, some of them having changed of ownership or merged: these oligopolistic firms are the “big three” in the USA, Van Camp, Star Kist, and Bumble Bee, the French Saupiquet, the Italian Trinity Alimentari and the Spanish Calvo in Europe, and, a bit later, the Thaiandese groups Thai Union and Sea Value. Specialized in the canning of seafood, if not exclusively in tuna canning, these firms are key operators on the international markets for raw material or processed products and benefit from the reputation of their private brands. This paper depicts the history of the world tuna canning industry throughout the past century, providing a synthesis of the abundant but dispersed literature on the subject, with an emphasis on the major companies of this industry. An analytical framework is proposed, mixing up some evidence regarding the rent-seeking strategies followed by leading companies and the various forms of rents which have been identified in the literature by both fisheries and business economists: resource scarcity rent, infra-marginal rent of producers (productivity rent), technological rent (increasing returns to scale and innovations in the fishing and processing industries), quasi-monopoly rent or reputation rent (due to the horizontal differentiation from advertising) and organisational rent (in relation to the new international division of labour). The discussion suggests that the basic principles of fisheries sustainable management are somehow challenged by the economic objectives of an industry enjoying such a variety of rents.

Keywords: rent-seeking strategies, business history, concentration, commercial brands, inverted supply chain

INTRODUCTION

Rent capture strategies are central for the understanding of the fish processing industry development. Indeed, a significant part of the processed seafood sector consists nowadays in more or less vertically integrated supply chains, dominated by a few transnational corporations (TNCs) that rely on global sourcing for their production. Each year, more than 70% of the total landings of tuna (4 million tons) are processed to produce 1.5 million tons of canned tuna. Even if according to FAO statistics, canned tuna is produced in at least 40 countries, the consumption remains concentrated in two big market places (EU represents 35% of world consumption and the USA 25%) and in terms of firm ownership, the world canned tuna production shows a high degree of concentration as it may been estimated according to available statistics that in 2003, the 5 leading companies were concentrating 46% of world production and the ten leading ones 62%. From the resource rent due to the relative scarcity of fish, up to the oligopsonistic rent due to the market power of processing firms, the canned tuna industry offers many opportunities of rent creation, and it seems reasonable to assume that the appropriation or maximisation of these rents is an objective which explains a large part of the behaviour of the transnational corporations dominating the industry.
The analysis of rent capture strategies in the fish processing industry fails under the scope of two research areas: business history and fishing industry economics. Although business historians did not work so much on seafood processing industry, it is remarkable that the major papers in this field included sound considerations for the problems raised by marine resource availability and management. The analysis of California fisheries industrialization in the years 1900-1925 by Arthur F. Mc Evoy (1983) suggests that most of future marine resources management problems ensue from the failure of public authorities to properly examine the implications of technological changes in the whole industry when these changes occur. In her study of the changing spatial pattern of the British Columbia salmon canning industry, Dianne Newell (1988) tried to determine the respective influence of ecological factors -including resource distribution-, technological change, business competition, labour shortages, and marketing considerations on the timing and pattern of spread and contraction of this industry over a hundred years period. Both papers underline the seafood industry main peculiarities: fish is the last major raw material used by the agro-food industry which remains wild-caught, and therefore the fluctuations in the supply of raw material is a major concern for the processing sector, while firms of the harvesting sector, even when vertically integrated, will always tend to engage in a race for fish which is basically the search for the capture of a fugitive scarcity rent.

The purpose of this paper is to examine the various sources of rent and the rent-capture strategies in the seafood processing industry, through one case-study: the more than hundred years old tuna canning industry. Over the last century until nowadays, the tuna canning industry has been dominated by a few big firms, some of them having changed ownership or merged together: these firms are the US “big three” Van Camp, Star Kist, and Bumble Bee, the French Saupiquet, the Italian Trinity Alimentary, the Spanish Isabel Garavilla, Jealsa, Salica Albacora and Calvo in Europe, and later the Thai groups Thai Union and Sea Value. Specialized in the seafood canning industry if not exclusively in tuna canning, these firms are renowned on their domestic markets thanks to the reputation of their private brands, among which emblematic examples are Star Kist’s “Charlie the tuna” or Van Camp’s “Chicken of the Sea”. The first section of this paper redraws the early history of the tuna processing industry. The second section presents four case studies of leading tuna canning firms to stress the conditions of emergence of the oligopoly. Finally, a synthesis brings together all the available evidences regarding the rent-catching strategies of the tuna processing industry into an analytical framework which aims at building a bridge between business studies and fisheries economics.

THE EARLY HISTORY OF THE TUNA CANNING INDUSTRY (FROM 1866 TO WWII)

Tuna has long been used as a raw material for traditional seafood processed products like the bluefin tuna (Thunnus thynnus) which was salted and preserved with olive oil in barrels around the Mediterranean since the 15th century (Doumenge 1998), or the Japanese preparation made with smoked skipjack (Katsuwonus pelamis), known under the name of katsuobushi since 1674 (Matsuda 1998). These traditional products have more or less survived by evolving in a joint way with their specific target markets, benefiting also from the technical and organisational innovations of the modern tuna industry. The tuna processing industry developed worldwide since the beginning of the 20th century first as a complement and later as a substitute to the sardine canning industry. Indeed, the fish canning industry had developed during the 19th century at first in Europe then in the USA, using sardines and salmon, and later albacore (or longfin tuna, Thunnus alalunga) and bluefin tuna became the first tuna species to support intensive fisheries for the needs of canneries (see Figure 1). Thus, tuna as a mass-product has been the creation of the fish-canning industry, which stimulated the development of its own new outlet: the continuously growing consumption of canned tuna by the increasingly wealthy consumers of the USA and Western Europe. The reasons why the fish-canning industry achieved thanks to the tuna the development that this industry began with the sardine are twofold. Because of its short life cycle, sardine abundance is highly unpredictable, and because of its small size, sardine incorporation into industrialised processes would require an incompressible level of labour. On the opposite, tuna stocks are abundant and
relatively stable, as far as it is feasible to organise their exploitation at the relevant (what means oceanic) scale, and tuna is a large fish whose utilisation toward transformation appeared to be more compatible with mechanisation, and thus allow for the implementation of economies of scale and waste minimisation strategies. During this first Era of the tuna industry development, entrepreneurs who created the pioneering tuna canning companies were instrumental in the support and the spreading of many technological innovations, which resulted in the extension of raw material sources as well as in the development of canned tuna mass-consumption.

European pioneers of the tuna-canning industry

In Europe, the modern tuna industry developed as early as in the 1880s when the emergence of the canning industry affected the traditional and seasonal fisheries of albacore in the Biscay Bay and of bluefin tuna in the Mediterranean. The art of canning was quickly perfected after that the Frenchman Nicolas Appert had published in 1810 his method for the preservation of food in glass bottles (Jarvis 1988). That same year, Pierre Durand, another Frenchman who migrated to England where he changed is name into Peter Durand, was granted a patent from King George III for the idea of preserving food in “vessels of glass, pottery, tin or other metals or fit materials”. Two English engineers, Bryan Donkin and John Hall, bought Durand's patent and set up the first commercial canning factory using tinned iron containers in Bermondsey (England) in 1812 (Robertson 2005). Can’s convenience became then a field for continuous improvements. The first European cannery dedicated to fish preservation was established in 1822 by Nicolas Appert and Jean-Joseph Colin in Nantes, France (Guillotreau and Ferreira Dias 2005). The early development of the French canning industry relied on sardine, but about forty years later, the canning of longfin tuna started in the Islands of Yeu in 1866 and Groix in 1873, and spread around by 1880, when the sardines disappeared for the first time during almost eight consecutive seasons (Doumenge 1998, Guillotreau and Ferreira Dias 2005). Fishermen from Groix began to specialize in tuna fisheries in order to supply the numerous canneries of the French Atlantic coast, mainly based in Douarnenez (where the always active Wenceslas Chancerelle fish-cannery, said to be the oldest cannery in the world, was created in 1853) and Concarneau: 200 to 220 tuna boats were operating from this island from the 1880s until the World War II, being able to land up to 10,000 tons of longfin tuna each year. But although these fleets were numerous and well-organised, they did not turn much toward technological changes and were still made of sailing boats without refrigeration system in the 1930s.

On the Atlantic coast of the Iberic peninsula, the fish canneries were established at first in Portugal as soon as 1854 and then in Galicia (Spain) in 1879 (Guillotreau and Ferreira Dias 2005). In Galicia, the canning industry was immediately confronted to the problem of raw material shortage due to the sardine crisis of 1880-1887 and the longfin tuna (albacore) became targeted for the supply of the canneries. The Galician fish-canning industry developed quickly, at first in Bermeo (in the Basque region) and in Cantabria: the number of canneries had risen to 106 in 1907 (d’Avigneau, 1958), while the fishing boats were equipped progressively with steam motors as early as 1900 and with diesel motors during the 1930s (Doumenge 1998). Nevertheless, their yearly landings of tuna remained limited to 4,000 to 6,000 tons. That is the reason why the Galician fish-canning industry, which will have been characterized by a high level of atomisation until World War II, will not focus on tuna before the shift of the European fleets toward the exploitation of the large tropical tuna stocks in the 1950s (Muñoz Abeledo 2005). However, the genuine canned tuna production in Spain appears to be strongly linked to the bluefin tuna catches in the Andalusian tuna trap fishery. During the second half of the nineteenth century the deregulation of the sector led to the appearance of powerful tuna trap and salted fish firms. They were set up from the late 1870s in Cadiz and, in addition, in the following decade in Huelva, specifically in Ayamonte (Rios Jiménez, 2005) because of the arrival of Italian businessmen from Genoa (see below). They gave a boost to the sector, so that in 1887 there were six factories where more than 1500 people worked and production was 1200 tons per year. From 1890, firms which were specially Andalusian were set up and there was a
withdrawal of the Italian businessmen. Therefore, in 1893 there were already 13 canning factories which exported almost all its canned tuna production to the Italian market. Between 1910 and 1914, just before WW1, the highest levels of production and export were reached (i.e., around 4,400 MT. per year). Nevertheless, after WW1, a long non-change situation started. Then, canned bluefin tuna production and tuna traps were run by “Consorcio Nacional Almadrabero” as a monopoly. It maintained this privileged situation until 1972.

In the Mediterranean, most of the abundant production of bluefin tuna caught with fixed gear trap was preserved with oil in barrels, following an industrial process which had developed in Italy, Spain, Portugal and Tunisia since the 15th century (Doumenge 1998). In 1868, some entrepreneurs from Genoa originating from the long-standing bluefin tuna trap fisheries adopted the technology of the preservation in metal-box and spread it to the Spanish, Portuguese and Tunisian coasts where they were controlling bluefin tuna trap fisheries (Pavesi 1889). By 1870, the boats operating in the Mediterranean trap fisheries were equipped with steam motors that doubled their production. As a result, Genoa but also Livourne became central places for the production and trade of canned bluefin tuna around the Mediterranean (Roesti 1966). But although the annual supply of fixed fisheries to this industry may have been around 24,000 tons of bluefin tuna at the end of the 19th century, several factors such as the increasing coastal traffic, noise, and coastal pollution contributed to a continuous reduction of the trap efficiency during the years 1920s and 1930s (Fromentin and Powers 2005). These irregular landings of bluefin tuna in the Mediterranean would later conduct Italian canners to change their raw material toward the use of tropical tuna. The heritage of this industry was twofold: on the supply side, it provided the Italian processors with a long experience in the organisation of the industry toward the final market, and on the demand side, it perpetuated in the Mediterranean countries the consumers’ preference for high quality products prepared with oil. As the bluefin tuna migrates to the North Sea for feeding during the summertime, it became also exploited there mainly by German, Danish and Norwegian fleets. The abundance of bluefin tuna in Norwegian waters stimulated the fishing industry to improve catch and processing methods: in the years 1920s, the Norwegian fleet began to experiment a new very efficient gear, the purse seine, and by 1923, one entrepreneur created a cannery with the support of Italian tuna canning experts and began to export canned Norwegian tuna to Italy (MacKenzie and Myers 2005). Nevertheless, tuna canning industry will never develop at large scale in Northern Europe.

US entrepreneurs and the setting of the Californian tuna industry

The canning techniques were introduced in the USA by the English migrant Thomas Kensett who would have packed oysters and other seafoods in New York as early as 1812 (Collins 1924). The development of the American tuna canning industry took place in California, almost one century later. The first fish cannery on the Pacific Coast was a salmon cannery built in 1864 by the brothers George and William Hume from Sacramento (Jarvis 1988). In 1889, the Golden Gate Packing Company of San Francisco created the first cannery devoted solely to marine fishes on the Pacific Coast (Love 2006). Because local catches were not sufficient, the Golden Gate Packing Company moved in 1893 its operations from San Francisco to San Pedro, where it re-established itself as the California Fish Company (Scofield 1954). Other sardine canneries developed, but low catches were recorded at the beginning of the 20th century, while albacore and other tunas were abundant but not so much appreciated for fresh consumption (Love 2006). In 1903, Albert P. Halfhill, co-owner of the California Fish Company, began to test a new process for the canning of albacore tuna (Clemens and Craig 1965); the experiments for industrial production of canned albacore were conducted by his superintendent Wilbur F. Woods during the years 1905 to 1907, and the large-scale production started in 1909 (Queenan 1983). Due to successful advertising and a price competition between tuna packers, the household consumption was encouraged at the national level and the demand increased again during World War I: as a result, there were 36 tuna packing canneries operating along the West Coast by 1917, which employed over 1,800 workers and were processing the
catches of around 4,800 fishermen representing various ethnic groups including Japanese, Portuguese, Italians, and Eastern Europeans (McEvoy 1983).

In order to supply this growing market, tuna canners were forced to introduce new species like bluefin, yellowfin and skipjack, what stimulated the internationalisation of the Californian tuna fisheries, permitted by the intensive mechanisation of boats. As a matter of fact, gasoline engines were used by fishermen in San Francisco as early as 1895 and by 1915, most of the fishing boats on the Californian coast were motorized (McEvoy 1983). The purse-seine technique, which had been developed since 1893, was first applied to albacore during the years 1915-1917 (Skogsberg 1925). In 1918, because adverse natural conditions led to low albacore catches, purse seiners began to target bluefin tuna (Love 2006). This new fishery attracted a large number of fishermen: purse seine boats came from the North and additional boats were built in San Pedro and Los Angeles. But whereas the fleet size continued to grow until 1921, when more than hundred purse seine boats were operating, the peak of production had been reached two years earlier, in 1919 (Skogsberg 1925). At the same time, the US food industry faced a post-war overproduction crisis; consequently, the number of fish canneries in California fell from 57 in 1919 to 34 in 1923 (McEvoy 1983). Because the supply in excess on fish markets made the prices plummeting, purse seiners were led to borrow more and more money, and as a result no more than six purse seine boats were still independent in 1923, while the others were mortgaged or owned by banks and canneries. These economic difficulties coincided with an enormous decline in bluefin tuna landings between 1919 and 1921, because of natural conditions which made the catch more difficult (Skogsberg 1925). Thus, although the Fisheries administration had early anticipated that the future development of the Californian fishing industry would rely on the exploitation of high-seas by large and speed purse-seine boats (Thompson and Higgins 1923), the extension of the tuna fisheries toward Mexican waters in response to the decline of albacore and bluefin catches was experienced at first by pole-and-line bait-boats.

Many technological innovations were introduced into the bait-boats thanks to the financial support of the canneries (Godsil H. C., 1938). The bait-boats grew in size and became able to carry large quantities of fuel, bait and ice; the radio communication improved the safety; the electric refrigeration solved the ice problem: by 1927, more than half of the tuna used by the Californian canneries came already from the South of the boarder (Conner, 1931). The catches will henceforth constitute mainly in two tropical species, yellowfin tuna (Thunnus albacares) and skipjack: both species accounted for almost three quarters of the tuna landed in California, and were delivered exclusively to canneries in San Diego and San Pedro (Scofield 1931). The organisation of the transport chain further improved: in the 1930s, it was made possible to freeze the catches onboard (Francis 1992). Around 1935, a cold storage plant for fish was also created in Puntarenas, Costa Rica, from where the tuna was then shipped to the US canneries by cargo reefers (SCDNR 1949). As a result, a first peak of the Californian canned tuna production was reached in 1940, when the US tuna fleet caught 85,000 tons of yellowfin and skipjack. In parallel, the commercial exploitation of albacore had started off the Columbia River in the 1910s, where it benefited in particular to the Columbia River Packers Association. This canny, based in Astoria (Oregon), then proposed for the first time its new brand Bumble Bee (SCDNR 1949). By 1930, albacore had exceeded salmon as the company’s principal product.

At that time, public policies began to play a role in the development and the protection of the tuna canning industry. In Japan, after the creation of a first tuna cannery in 1930 with the research and technological support of the administration, five canneries were operating one year later and up to 16 in 1932 (Matsuda and Ouchi 1984; Doumenge 1998). By 1933, Japanese processors had captured nearly one-third of the American canned tuna market, but in 1934, the US tariff on canned tuna increased from 30% ad valorem to 45%, what caused an immediate cut in half of Japanese exports and their decline until World War II (Petit 1960).
SYNOPTICAL CASE STUDIES OF FIRMS

The history of the whole industry divides into three periods: the first period is characterised by the technological innovations, the spatial extension of the activities and the popularization of tuna products; the second period is characterised by the search for organisational efficiency and increase in market shares; and the third period is characterised by the contestation of the American and European oligopolies by new entrants such as Asian raising TNCs, which imposed internationally major cuts in labour costs and a consecutive large-scale industry re-organisation. Those periods will be illustrated with four case studies.

Van Camp and its brand “Chicken of the Sea”

Frank Van Camp and his son Gilbert purchased a tuna canning company located at the Port of Los Angeles in 1914 and renamed it Van Camp Sea Food Company (Van Camp). Frank Van Camp had already been successful with his Van Camp Packing Company in Indianapolis, where he originated the packing of pork and beans in tomato sauce (Jones and Stokes, 2004). The new business went on to become the leader in the tuna industry and was influential in popularizing tuna on the national market. In addition, the company played a significant role in building both the fishing and canning industry in San Pedro. During its first year in business, Van Camp set a record for packing more tuna than any other company before (Queenan, 1983). He introduced new equipment to handle the tuna and developed a refrigerated warehouse. These innovations allowed Van Camp to purchase an unlimited amount of albacore from fishermen, thus removing restrictions on poundage and deliveries, which had been the standard practice of other canneries at that time (Jones and Stokes, 2004). The company also pioneered the purse seiner fishing technique and created the Van Camp tuna fleet (made up with fifteen 40-foot, gasoline-powered albacore boats) whose vessels were lent to fishermen who caught fish in return for the exclusive use of the company (Queenan 1983).

At that time, canned tuna was sold as an expensive good in grocery stores. Van Camp conceived a plan to change the price of tuna and public perception of the canned fish by making it an affordable food product. Van Camp convinced the other canning companies located at the Port to pool their funds so as to create a national advertising campaign for canned tuna products. All of the canneries agreed to lower the price of tuna to 10 cents per can. The success of the campaign was such that a few canneries expanded as the demand for canned tuna was growing, especially during World War I, several canneries also supplying the US army (Matson 1945, Queenan 1983 and 1986). Taking advantage of the post-war overproduction crisis, Van Camp Company purchased three other companies in 1922 (International Packing Corporation, Nielsen & Kittle Canning company, Ltd., and White Star Canning Company) to form Van Camp Sea Food Company, Inc. (Jones and Stokes, 2004). The firm established its commercial reputation under the brand name “Chicken of the Sea” and in the early 1950s, Van Camp introduced the famous mermaid picture on this product line. The profitability of tuna companies began to attract new investors and in 1963, Van Camp was purchased by the group Ralston Purina. In 1984, Van Camp Seafood closed its facilities in San Diego, and moved it to the distant shores of American Samoa. Mantrust Corporation, a group of Indonesian investors, took over Van Camp Seafood from Ralston Purina in 1988. In 1997, Van Camp Seafood was saved from bankruptcy and was purchased by the international group Tri-Union, and later by the Thailande company Thai Union in 2000. Thai Union closed down its Samoan processing facility in September 2009, with a subsequent loss of over 2000 jobs.

Saupiquet: from global integration to the “firm without plants”

Arsène Saupiquet founded his first cannery in Nantes, France, in 1877 and created the Saupiquet Company in 1891. Eight years later, he had already created 11 plants in Portugal and French colonies.
From the beginning of the 20th century, the company will develop through the absorption of competitors. In 1920, Saupiquet purchased the Peneau society which had been established in 1844. In addition to its tuna canning activities, Saupiquet developed a branch dedicated to vegetable canning based on the acquisition of other enterprises, including the famous Cassegrain in 1966. Saupiquet was instrumental in the popularization of the “tuna in brine” receipe in 1936. Following the extension of the French tuna fleet towards tropical waters, Saupiquet established itself in Dakar by merging small local canneries in 1956. Many other French companies opened tuna canneries in Dakar between 1955 and 1957, what raises rivalry for the tuna raw materials until 1962, when Saupiquet took over most of its rivals. As a result, the company was able to purchase up to 70% of tuna landings in Dakar from 1962 to 1966. In 1971, Saupiquet set up the SCODI factory (Société des Conserves de Côte d’Ivoire) in Abidjan, Ivory Coast. Four years later, the Cotonou Agreements provided ACP countries with a special trade regime for their exports to the European market, avoiding the regular 24% ad valorem duty charged for other countries. During the 1980s, Saupiquet became the leader for canned tuna products in France and Europe. In 1999, Saupiquet was purchased by Bolton Alimentari, an international holding company which already owned the Italian label Rio Mare. Finally Saupiquet sold out its early factories, becoming a “firm without plants”, while its market shares in France began to decline from 23,1% in 2000 to 18,4% in 2007 to the benefit of the concurrent label Petit Navire, formerly owned by Heinz-Star Kist.

**Star Kist: from economies of scale to the building of a brand portfolio**

Martin Bogdanovic, a yugoslavian fisherman, founded the French sardine company in Los Angeles in 1917. Less than ten years later, the company specialised in tuna canning. By 1939, the ‘Star Kist’ product-line had been created. In the meantime, the company had developed its own tuna fleet. Martin Bogdanovic was succeeded by his son Joseph after he died in 1944. By 1952, the French sardine company became the world largest tuna cannery in Terminal Island (Los Angeles), and changed its name to Star Kist Company. One year later, the company began to use tuna waste as a by-product for petfood. In 1960, Star Kist opened a plant in Puerto Rico. The character of ‘Charlie the Tuna’ started on TV adverts in 1962. The same year, Star Kist acquired 50% of GENEPESCA in Italy. In 1963, H. J. Heinz Company acquired SK, with Joseph Bogdanovich remaining as president. Looking for lower labour costs, StarKist opened a plant in American Samoa on the same year (Jones and Stokes 2008). In 1980, Star Kist became the top U.S. tuna brand. In 1983, the company started to decrease the workforce in its Terminal Island plant, which closed up one year after (Jones and Stokes 2008). At the same time, Star Kist expanded its facilities in Puerto Rico and Samoa, which became respectively the first and second largest tuna processing plants in the world (Vietor and Reinhardt 1995). Looking for larger outlets, the company entered the European market by purchasing local existing brands: the French company Paul Paulet, owner of the brand ‘Petit Navire’, was purchased in 1987 at a time when Star Kist entered the capital of the French tuna fleet (Guillotreau and Le Roy 2002), and in 1996 and 1997 Star Kist acquired successively Mareblu, a leading Italian label, and John West, a leading brand in the UK, Holland and Ireland, also present in 38 markets throughout Europe, the Middle East, Northern Africa, North and South America. Star Kist also acquired and developed the PFC, Ghana, in 1994, in order to increase its exports to the EU market under the favourable ACP trade regime, following the successful strategy implemented by Saupiquet. This portfolio of European brands was put together into the group MWBrands and separated from the US branch of Star Kist to be finally sold by Heinz to Del Monte Foods in 2006. In 2008, the Korean group Dongwon Industries acquired StarKist from Del Monte Foods.

**Calvo and the search for new consumers and markets**

The holding company Calvo started with a small canning plant in 1940 in Carballo (La Coruña) by Luis Calvo Sanz. The canned fish production started in 1942. This Galician canning company would have not
been so important if it had not introduced the canned yellowfin in the Spanish market after that Manuel Calvo Pumpido, the founder’s son, headed the company. Thanks to the supply of its first own fishing vessel, Calvo started producing canned yellowfin in round packages of three 80 gram cans in a market where consumers were traditionally buying oval cans for almost a century. In 1979, the holding company developed an aggressive advertising campaign, with television adverts starring two well-known actors repeating the slogan “Atún claro, Calvo”. Consequently, the holding company Calvo passed from the 300th position in the sales ranking to the 1st position of the food canning brands in the Spanish market. It is worth noting that the knowledge of brand name was equal to 98% in a very short period of time. At that time, almost all tuna cans produced in Spain are round – except part of the production in Southern Andalusia – and 80% of consumed canned tuna is yellowfin. Nowadays, the fleet of the fishing subsidiary Calvo Pesca amounts to eleven boats – 6 tuna boats, 2 supply vessels and 3 cargo reefers – totalizing around 400 direct employees.

The international expansion started soon after. The plant in Guanta (Venezuela) was opened in 1981. Additionally, the second plant in Esteiro (La Coruña) was created in 1986. In 1993 the Italian brand “Nostromo” and its processing plant in Modena were bought. “Nostromo” has now achieved the second position with 12% of this market. In 2003, the firm opened a new plant in Punta Gorda (El Salvador), whose production was devoted to the market of Central America, Mexico and USA. In 2004, 80% of the Brazilian company “Gomes de Costa” was bought over in Southern state of Santa Catarina, as a strategy to penetrate both the Brazilian market and the countries of Southern Cone, which represent a potential market of 250 millions of consumers. At that moment, the annual per capita consumption of canned tuna was still very small in those countries –less than 0.4 Kg/person in Argentina or 0.13 Kg/capita in Brazil – as opposed to the European indexes – 2 Kg/ capita in Italy or 2.15 Kg/capita in Spain – or the North-American index (0.9 Kg/capita). The “Gomes de Costa” company, which was created by a Portuguese immigrant in 1954, had plants in Itajai, Minas Gerais, Pernambuco, Rio de Janeiro and Parana. The first plant is the most modern in South America and was opened in 1998. Currently this subsidiary concentrates 50% of the Brazilian market (with a sales value of 100 million euros per year).

In October 2006 the holding company Calvo was intended to be sold to the Thailandese holding company “Thai Union”, the world leader. This raised a movement in Spain, mainly in Galicia, where the firm employs directly around 3,000 employees. The reason was the accumulation of losses that year in the whole economy because of the increasing price of raw materials and energy, and the low market value of the traditional three-can tuna packs. At that time, the third family generation started to be heading the firm. They own 77% of the holding company shares. In 2006, the holding company Calvo fetched losses of 12.55 million euros, against 26 million euros of profits in 2007. Finally, in 2008 the holding company Calvo has obtained the best results in its history with 28.16 million euros of gross profit and sales of 414.34 million euros, 21% higher than in 2006. In contrast, for the first four-month period of 2009, it has only experienced a 3% reduction in sales in a global situation of economic recession.

RENT-SEEKING STRATEGIES IN THE TUNA CANNING INDUSTRY

The gradual globalisation process as well as the international specialisation of the tuna canning industry fits pretty well with the classical determining factors embodied in the international trade theory. For the country where the innovation originated, the canning process represented a technological advantage (Ricardo 1823), which allowed France to become the world leader of (canned) seafood exports during the second half of the XIXth century, especially when supplying the gold rush or the US army with canned sardines during the “secession war” (Libaudière 1910). Then the technology expanded by imitation and direct investment to other countries like Spain, Portugal, the USA and Japan. The latter countries became

---

1 This plant was robbed and destroyed in July 2004 by a gang. After that event, the holding company Calvo decided to close it down due to the lack of safety.
rapidly exporters themselves (Vernon 1966). Following again Vernon’s theoretical predictions, the fairly basic technology of canning was then transferred to developing countries which benefited from comparative advantages in terms of abundant natural resources endowment and low labour costs for such a labour-intensive industry (Heckscher and Ohlin 1919, cited by Jones 1957). The relocation of processing plants near the tropical tuna fisheries areas began as early back as in the first half of the XXth century.

During the second half, the development of the tuna canning industry resulted mainly from increasing returns, the worldwide oligopoly looking systematically for economies of scales. Many mergers and acquisitions occurred during that period, first within domestic industries and then at the international level. This caused the concentration of the processing sector and the emergence of a large two-way trade of differentiated goods (Brander and Krugman 1983), along with an important intra-firm trade (frozen whole tuna and frozen loins).

Some big firms are still within the hands of their founder’s family, like Calvo in Spain. But as in any other highly internationalised industries, the change of ownership from generation to generation now falls increasingly into the modern financial capitalism, in line with the theory of control’s expectations (Berle and Means 1932). Former agro-business holdings (Heinz, Unilever, Nestlé, Mitsubishi, Del Monte…) are gradually substituted by diversified and large financial investors or equity funds (Bolton, Optorg, Lehman Brothers, Connors Brothers Income Funds, Thai Union…), whose strategies have sometimes led to the hollow corporation model, i.e. a firm without plants (Bettis et al. 1992; Ewaldz 1993). This can be illustrated by Bumble Bee’s decision to sub-contract an increasing part of its production to Pafo (Fidji) or SSTC (Papouasie-NG) and one step beyond by the Saupiquet case, which has sold out all its factories.

The global development of consumption and trade of tuna products stems from the strategy of a few big American and European processing companies, which had early established themselves as the leading companies on their domestic markets before going international (Vernon 1966). They spread internationally to take advantage of local comparative advantages and favourable trade regimes. Rent formation may then be explained by the corporate strategies of multinational firm and the imperfect competition of the canned tuna market, favoured by increasing returns (Helpman and Krugman 1985). The global strategy of the leading firms fits also very well into the Galbraith’s scheme of the inverted supply chain (Galbraith 1958, 1967). When a firm is able to produce a huge amount of products at relatively low costs, it becomes able to exert an economic, political and advertising power so as to create the needs for its products. In the inverted supply chain, firms do not adjust their production to the information sent by markets. They first define objectives in terms of return and then exercise pressure onto consumers to meet their goals. However, a firm which implements the inverted supply chain model may also become too rigid and far from consumer preferences for not being at risk of losing market shares in some places. This strategy was implemented by Van Camp when it convinced the US canned salmon consumer to eat canned tuna during WW1 (Jones and Stokes 2004), and during the 1960s and the 1970s by Star Kist which made ‘Charlie the tuna’ appearing in no less than 86 different commercial spots on the US TV (Jones and Stokes 2008). Finally, the purchase of these firms by Asian newcomers in the industry, which benefit from as high economies of scales but remain closer to the basic consumer preference for low-price products confirms the limits of the inverted supply chain strategy as it was predicted by Galbraith himself (Galbraith 1967).

In addition, the fisheries economics literature has pointed out the variety of rents which may be encountered: scarcity rent, intra-marginal rent of producers (productivity rents), technological rents (from seafood processing), quasi-monopoly rents or reputation rents (due to intense advertising) and organisational rents (in relation to the new international division of labour). The economic history of tuna processing leaders tends to demonstrate that the successful firms were those able to capture most of these rents and convert them into market power (see table 1).
Table 1. Theoretical roots of the rent-seeking strategies in the tuna canning industry.

<table>
<thead>
<tr>
<th>Rent seeking strategies</th>
<th>Economic theories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resource rent of large fish stocks</td>
<td>Comparative advantages from factorial endowment (Heckscher-Ohlin)</td>
</tr>
<tr>
<td>Technological rent of processing</td>
<td>Increasing returns and two-way trade (Brander-Krugman) Inverted supply chain (Galbraith)</td>
</tr>
<tr>
<td>Organisational rent (cut in transportations and labour costs)</td>
<td>Multinational firm theory (Vernon)</td>
</tr>
<tr>
<td>‘Institutional’ rents due to favourable trade regimes</td>
<td>Public rent-seeking (Krugman) Inverted supply chain (Galbraith)</td>
</tr>
<tr>
<td>Market rent due to oligopoly and brand reputation</td>
<td>Imperfect competition (Krugman) Inverted supply chain (Galbraith)</td>
</tr>
</tbody>
</table>

Indeed, the leaders of the tuna canning industry have adopted successfully but unevenly the following strategies: race for supply security (move towards large and sustainable tuna stocks), vertical integration (through ownership of boats, financial control or long-term contractual agreements), horizontal concentration, preferential trade regimes, commercial advertising (horizontal differentiation), economies of scale in processing plants, relocation of plants and cuts in labour costs, penetration into new markets through brand acquisitions. The uneven global coverage of resources and markets by the firms, the unequal weight of outsourcing in the business, or the disperse degree of vertical integration... result in the existence of several strategic groups in the sense of Caves and Porter (1977). Any attempt of managing stocks by limiting the allowable catch in a particular region of the world will have undoubtedly a differentiated impact for these different groups.

CONCLUSION

The study of several ‘life-stories’ of firms throughout the past century shows the emergence of a global oligopoly for the tuna canning industry due to large increasing returns at the global scale for both fishing and processing segments, and the (still) steady demand for tuna products. But this oligopoly is unevenly distributed worldwide and across the value chain, resulting in various strategic groups in terms of location, branding, vertical integration, shareholding, etc. Hollow corporations such as Saupiquet (a pioneering firm now without factories) somehow compete with more integrated global companies (Thai Union, Calvo) or innovating firms (Starkist). It is expected that fisheries management policies adopted within the different RFMOs may impact differently these firms: family groups may react differently than companies controlled by financial funds, firms having a global coverage (Calvo, Albacora Salica) may adjust more rapidly to regional catch limitations than others, etc. New operators play an increasing role: international brokers, retailers and their private labels. They both contribute to standardize the level of prices for frozen and canned tuna on a worldwide scale, but may exert market power against the local canneries, themselves putting more pressure on fishing companies on the global market. Location choices for canning plants have led to intensify harvest rates in many areas. They have been made possible by technological innovations in the freight and loining segments. Such location strategies are driven by factors such as low labour costs, a closer access to natural resources, and preferential tariff treatments. The ability of tuna canning companies to stimulate (and even create) demand may also result in intensified exploitation: Latin America (Calvo), Middle East (MWBrands), China and India tomorrow.

It looks as though the total allowable catch of tuna is now reached meanwhile the demand keeps on increasing. An industry enjoying such a variety of rents is certainly a matter of challenges for fisheries
managers. Has the tuna industry been stuck into an « economic trap » of increasing returns? To which extent is the whole tuna industry driven by the downstream side (brokers, processors and big retailers), supplying markets with always larger quantities of low value products? How far can this established canning supply chain been challenged by new and higher-valued products such as fresh or frozen steaks, sashimi (for bigeye and yellowfin), etc.? The future of this long-standing industry might know a turning point in the years to come and will raise a few interesting issues for analysts.

REFERENCES


Godsil H. C., 1938. The high seas tuna fishery of California. Division of Fish and Game of California, Bureau of Marine Fisheries, Fish Bulletin n° 51, 41 pages.


Helpman, E. and P.R. Krugman, 1985, Market structure and foreign trade : increasing returns, imperfect competition and international economy, MIT Press


Skogsberg Tage, 1925. Preliminary investigation of the purse seine industry of Southern California. State of California, Division of Fish and Game, Fish Bulletin n° 9, 95 pages.


**ENDNOTES**

1 Following an authorization granted by the Congress in 1897, San Pedro will become the official port of Los Angeles in 1907, one year after the city of Los Angeles extended its boundaries to the coast.

2 The albacore fishery finally collapsed in the 1930s (Clemens and Craig 1965).

3 This plant was robbed and destroyed in July of 2004 by an armed gang. After that incident, the holding company Calvo decided to close it down due to the lack of safety.

4 See also the example of Heinz in the agrifood sector (Koehn 1999).