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Tuna, Shrimp, Soy and Beef

Arie Pieter van Duijn, Rik Beukers, Roberta B. Cowan, Lucas Judge, Willem van der Pijl,
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Summary

This study is a detailed analysis of which parts of the tuna, shrimp, soy and beef supply chains are most open to constructive engagement through financial vehicles and mechanisms. The study indentifies the largest market shares in the various supply chains. For the retail sector, the objective was to analyse the openness of the retail sector to financial influence taking into account the latest sector trends.

S.1 Key findings

The beef and soy supply chain are inextricably linked. As a result companies that are active in the soy supply chain are often also active in the beef supply chain. Compared to the skipjack canned tuna and shrimp supply chains a smaller number of companies dominate the beef & soy supply chain.

- The skipjack canned tuna supply chain is well developed and consolidated with a small number of large, and often vertically integrated, companies dominating the supply chain. However, there are also large companies with a strong focus on either fishing or processing activities.
- The cultured shrimp supply chain is less developed and segmented. However, vertical integration and consolidation constitute a growing trend. Compared to the other supply chains smallholder farming still plays an important role in the cultured shrimp supply chain.
- The soy & beef supply chain is well developed and consolidated with a small number of large, and often vertically integrated, multinational companies dominating the supply chain.
- The food retail sector in the US is highly competitive and consolidated. The EU and Chinese food retail sectors are highly competitive but segmented. In the EU consolidation occurs at the member-state level while in China segmentation is the result of geography, infrastructure and culture, with international retailers struggling to gain a foothold. In all three markets, food retailers have to respond to changing consumer preferences in terms of both convenience and quality.
- In the skipjack canned tuna and cultured shrimp supply chains, a few key financial institutions have financial ties to the most companies. The financial institutions are amongst the largest providers of Exchange Traded Funds (ETFs) and other passively managed funds in the world. Through their design, these funds are long-term shareholders of companies and are unable to divest from them. At the same time, the providers of these funds tend to engage less on sustainability issues compared to active investors.
- In the soy & beef supply chain the influence of retail banks is more significant. While retail banks are more likely to have developed sustainability policies and might be more prone to engage companies on sustainability issues, the nature of their financing, which occurs largely through syndicated loans, changes the dynamics of their advantage.
- As most retailers included in this research are large, listed companies, the same financial institutions are prevalent as those identified in the three supply chains. The analysis of the financing of the retail sector furthermore shows that the type of financier is related to the category of financing. Shares in retail companies are predominantly held by the large providers of passive investment vehicles, while bonds are more often held by insurance companies. Syndicated loans are issued by globally active retail banks.

S.2 Complementary findings

Based on the outcomes of this study, the authors make the following recommendations:

Ensure a solid, factual basis for constructive engagement
The success of any engagement effort with a company depends on the content of the investor's message and the quality of the supporting evidence. The factual basis of an engagement is a key prerequisite for any influencing strategy.

Identify and engage with likeminded investors
The dialog can be more constructive when likeminded investors and other stakeholders team up. The most widely used platform used by responsible investors is the United Nations Principles for Responsible Investment initiative (PRI).

Select market leaders for spill over effects
Constructive engagement with companies that have a large market share and leading role in supply chains can lead to improvements in the company itself as well as example-setting for peers.

Tone should fit the ownership and capital structure of a company
Companies with a majority owner may be open to collaborative messages, which can serve as a form of free consulting. Highly indebted companies might be more open to engagement by bondholders, for example through the design of green bonds or other forms of innovative financing.

Additional analysis
The scope of this study focused on the supply chains and the food retail sector and their financial composition in a general sense. Further research on the supply chains and the food retail sector would reveal more specific information about market shares within different segments of the supply chains and the food retail sector as well as on opportunities for constructive engagement with financial institutions.

S.3 Method

The financial sector serves as a gatekeeper to capital flows that are critical in supporting companies' expansions of operational capacity. As such, the financial sector has significant influence over how these businesses exploit renewable resources. Historically, financial markets have not accounted for the depletion of finite natural capital caused by the operations of their portfolio companies. This has resulted in an unsustainable use of renewable resources. Four commodities were selected (skipjack canned tuna, cultured shrimp, soy and beef), because of their global economic importance and their potential for adverse environmental impacts. The commodities soy and beef were combined in the analyses of the supply chain as a result of the heavy use of soy as an input in beef production.

The analysis of the three selected supply chains:

- Verified the supply chains for each commodity by geography;
- Identified the top companies in each segment of the supply chain (e.g., farmers, primary processors, etc.); and
- Identified primary sources of financing for each company.

The study was carried out in two stages. Stage 1 was carried out in 2014, while stage 2 was carried out in the first half of 2015. The first stage of the study was divided into four phases. In phase 1 the supply chain and focus for each commodity was geographically verified. Phase 2 analysed the ownership structure and primary sources of financing. In phase 3 a snapshot of the composition of the financing of each major segment in the value chain was compiled. Phase 4 consisted of a macro-level analysis of the collected data. The second stage of the study comprised of the addition of the food retail sector, additional expert interviews and an online survey of key financial institutions.

1 Introduction

1.1 Background

The financial sector (e.g. investors, lenders, insurers, funds, etc.) serves as a gatekeeper to capital flows that are critical in supporting companies' expansions of operational capacity. As such, the financial sector has significant influence over how these businesses exploit renewable resources. Historically, financial markets have not accounted for the depletion of finite natural capital caused by the operations of their portfolio companies. This has resulted in an unsustainable use of renewable resources.

A detailed analysis of the financial vehicles and mechanisms that fund the expansion of production follows. The following four target commodities were selected:

- Skipjack canned tuna
- Cultured shrimp
- Soy and
- Beef.

These four commodities were selected because of their global economic importance and their potential for adverse environmental impacts. The commodities soy and beef were combined in the analyses of the supply chain as a result of the heavy use of soy as an input in beef production. Finally, the food retail sector was dealt with as a separate category as it plays an important role in each of the three supply chains of the four selected commodities.

1.2 Study objective

For each of the four target commodities the objective was to analyse which parts of the supply chain are most open to constructive engagement and where the largest market shares in the various supply chains are aggregated. For the retail sector, the objective was to analyse the openness of the retail sector to financial influence taking into account the latest sector trends.

1.3 Study focus

A number of production countries and markets were selected as focal points of this study. These are presented below in Table 1.

Table 1
Selected production countries and markets for the four target commodities and the food retail sector

	Skipjack canned tuna	Cultured shrimp	Soy and beef	Food retail
Production Countries	Ecuador Indonesia Japan Philippines USA	Indonesia India Thailand Vietnam	Argentina Brazil Paraguay USA (soy)	
Markets	EU US Japan	EU US Japan	EU Japan China Russia (beef)	EU US China

1.4 Study approach

The study was carried out in two stages. Stage 1 was carried out in 2014, while stage 2 was carried out in the first half of 2015. The first stage of the study was divided into four phases. In phase 1, the supply chain and focus for each commodity was geographically verified and a maximum of 100 companies were selected for further analysis in phases 2 and 3. During phase 2, the ownership structure and primary sources of financing were analysed for each of the selected companies. In phase 3, a snapshot of the composition of the financing of each major segment in the value chain was compiled, based on the analysis of the selected companies. Phase 4 consisted of a macro-level analysis of the collected data and the reporting of the results. The second stage of the study comprised of the addition of food retail companies and further interviews and an online questionnaire survey of key financial institutions. As a result a number of analyses and profiles were added and/or updated.

1.5 Structure of the report

Chapter 2 provides a sector overview of each of the four selected commodities and the retail sector followed by an analysis of the selected companies. Chapter 3 presents the results of the analysis of the financial composition of the three supply chains and the food retail sector. This analysis includes an overview of companies active in various segments of the supply chain, the food retail sector and financial institutions providing finance to multiple companies. In addition, leverage points for each of the selected commodities at both the supply chain and company level will be identified. In Chapter 4 the main conclusions and recommendations of the study are presented.

1.6 Limitations of the study

Within the context of this study it was impossible to assess where the largest market shares were aggregated in each of the three supply chains, which was part of the study objective. Nevertheless, the available information allowed the identification of the most important companies in each of these supply chains. As a result this eventually did not constitute a major constraint. Out of the total of 19 financial institutions that we approached for the online survey of key financial institutions, part of the second stage of the study, only one responded to our request.

The financial analysis that is discussed in chapter 3 has been undertaken on the basis of publicly available information, primarily retrieved from company accounts and the Bloomberg database. As such, a limitation is that any information regarding the financing of companies that is not publicly available is not reflected in the outcomes of this study. In general, information about ownership and shareholdings tends to be more widely available than information regarding the identity of debt issuers (such as bondholders or banks that issue corporate loans). As such, the overviews of financial institutions with ties to the most companies discussed in section 3.4 might be skewed toward shareholders.

Furthermore, the financial analysis of each of the supply chains, as discussed in section 3.4, includes shareholder data from diversified financial institutions that might own shares as well as act as an asset manager. The databases consulted in this research do not delineate shares held by asset managers – investments of third parties managed by financial service companies – from those owned by financial institutions.

The data analysed in chapter 3 also includes debt issued by banks or investors to companies that might have activities unrelated to the supply chains that are the focus of this report. These loans or bonds are included in the analysis, even if it cannot be confirmed that they related to specific activities or commodities.

2 Supply chain analysis and company selection

2.1 Introduction

This chapter provides a sector overview of respectively the skipjack canned tuna, cultured shrimp, soy and beef and food retail sectors. Each sector overview provides a brief analysis of the respective supply chain and the global context in which they have been considered. The analysis of the supply chain defines the crucial steps from the level of production to the level of distribution. As a result of these analyses, for each supply chain key companies and their relevant subsidiaries are selected for further analysis. Sectoral trends for each supply chain and food retail sector are then discussed. An assessment of the trends is based on an assessment of the quantitative findings from phases 2 and 3 (see Section 1.4) along with anecdotal and qualitative information from expert interviews. In the final section an overview is provided of companies that are active in various segments of a supply chain or multiple supply chains.

2.2 Skipjack canned tuna

2.2.1 Sector overview

According to FAO statistics, almost 2.8m tonnes of skipjack tuna were caught in 2012. During the past few years landings of skipjack tuna have been gradually increasing. In 2000 only 2m tonnes were landed. Other tuna species, such as yellow-fin and albacore tuna are also used for canning, although the majority of canned tuna products consist of skipjack tuna. Canned skipjack tuna cannot be distinguished within the current system of global trade statistics. Skipjack tuna is included in the category of canned tuna and pre-cooked loins. Within this category canned skipjack tuna is the major product. Canned tuna and pre-cooked loins for canned tuna processing are widely traded. In 2013 global exports of canned tuna and pre-cooked loins amounted to USD8.1bn, while the imports of canned tuna and pre-cooked loins were USD8.3bn.[1]

In 2013 most skipjack was caught in Indonesia, with landings of 0.45m tonnes (see Table 2). Together the five production countries listed in Table 2 were responsible for 45% of the global skipjack catch. In 2013, other countries with significant catches were Korea (0.20m tonnes), Spain (0.20m tonnes), Taiwan (0.19m tonnes) and Papua New Guinea (PNG) (0.14m tonnes). Compared to 2000 all selected countries, except for Japan, have increased their skipjack landings. A possible explanation for the decline in Japanese landings are increased competition from Korean and Taiwanese fishing vessels and joint venture operations with for example PNG. In the case of joint venture operations with PNG landings are not registered as Japanese.[2]

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1 ITC Trademap, trade statistics 2014.
2 FFA, Market and Industry Dynamics in the Global Tuna Supply Chain, 2011.

Table 2
Landings of (skipjack) tuna from selected production countries[3]

Country	Landings in 2000 (million tonnes)	Landings in 2013 (million tonnes)
Indonesia	0.24	0.45
Japan	0.34	0.27
US	0.10	0.23
Philippines	0.11	0.21
Ecuador	0.11	0.20
Total	0.90	1.36

In 2013 the US was the most important importer of canned tuna and pre-cooked loins with 226,000 tonnes (see Figure 1). This tuna was mainly for domestic processing and consumption. Besides the US, several EU countries (UK, France, Italy, Spain and Germany) import large quantities of pre-cooked loins and canned tuna. Italy and Spain import mainly import pre-cooked loins for processing while the UK and Germany import canned tuna ready for consumption. Japanese imports of pre-cooked loins and canned tuna differ from the other countries because they are also used for other products such as dried, fermented and smoked tuna (katsubushi).

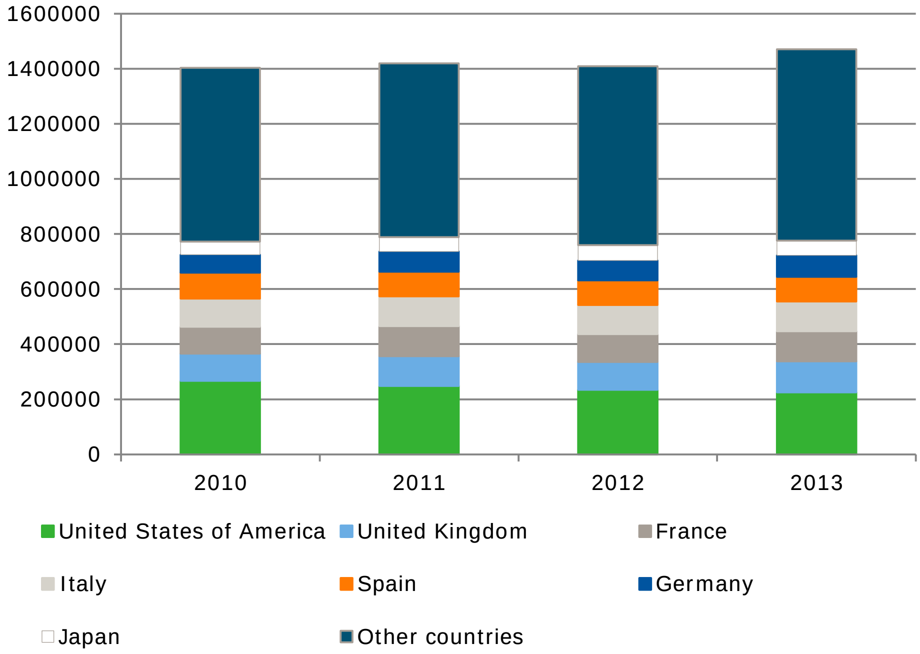

Figure 1 *Global imports of canned tuna and pre-cooked loins 2010-2013 (tonnes)*[4].

Of the five production countries selected, Ecuador was the most important exporter of canned tuna and pre-cooked loins in 2013, exporting 177,000 tonnes (see Figure 2). Ecuador, along with the Philippines and Indonesia, export canned tuna and pre-cooked loins. Pre-cooked loins are exported to Thailand as raw material for the canning industry. Japan and the US do not export large quantities of canned tuna. Instead they supply it to the domestic processing industry for local consumption.

3 FAO, Fishery Statistics, Global Capture Production, viewed 18 May 2015.
4 ITC Trademap, trade statistics 2014.

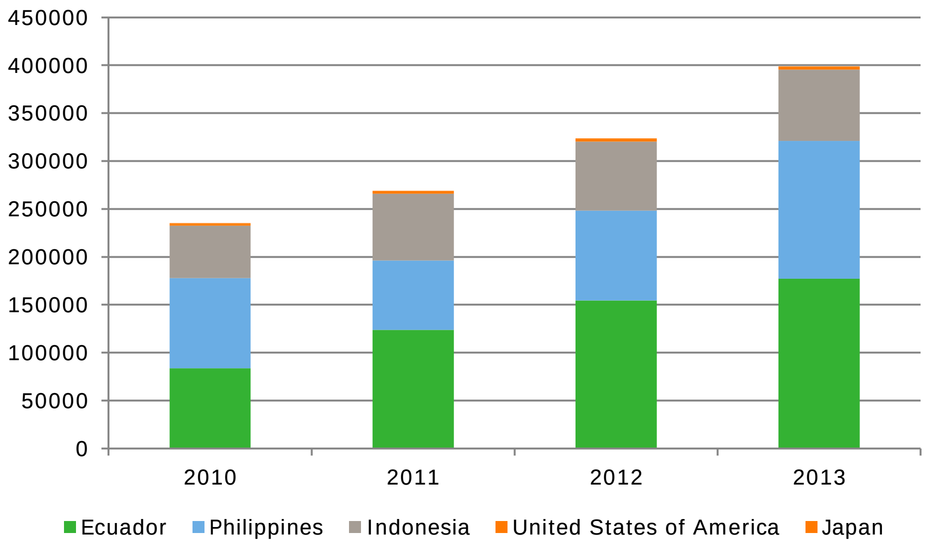

Figure 2 *Export of canned tuna and pre-cooked loins by selected countries 2010-2013 (tonnes)*[5]

2.2.2 Supply chain characteristics

Figure 3 highlights the general supply chain segments for canned tuna in the selected countries:

Figure 3 *General segments of the canned tuna supply chain in selected production countries*

The supply chain characteristics of the selected production countries vary based on the composition of the fishing fleet and the relationship between the fishing fleet and the processing industry. Most countries have 10 or more large purse seiners with a Gross Register Tonnage (GRT) of 1,000 or more that are used to catch skipjack tuna. Indonesia is an exception as in Indonesia most skipjack tuna is caught by small-scale vessels (see Table 3). Not all vessels are registered in the same sovereign state as that of the ship's owners. Large fishing and trading companies (Tri Marine, FCF and Itochu) own several fishing vessels and sometimes also processing plants in different countries. Some US purse seiners for example are owned by Tri Marine, and have links with Taiwanese investors.

[5] ITC Trademap, trade statistics 2014.

Table 3
Number of purse seiners larger of 1,000 GRT or more and processing plants of selected countries for canned (skipjack) tuna[6]

Country	GRT of purse seiners	Purse seiners with GRT ≥ 1,000	Number of canned tuna processing plants
Spain	103,719	31	68
Ecuador	66,443	18	15
Japan	63,231	33	1
US	59,781	37	2
Philippines	58,402	10	13
Indonesia	33,411	3	46

All the selected production countries have both a domestic fishing fleet and a domestic processing industry. However, relationships in the supply chain differ between countries. In the Philippines and Indonesia the degree of vertical integration is low with only a few companies involved in both fishing and processing. Most Philippine and Indonesian processing companies source from domestic fishing vessels. Skipjack tuna caught by Philippine or Indonesian vessels that is not sold to the domestic processing industry is instead supplied to Thai processors. Also in Japan there is little vertical integration between the fishing fleet and the processing industry. Japan has one tuna canning company that only uses 10% of the Japanese tuna catch and does not own any vessels. Skipjack tuna caught by Japanese vessels is also further processed and used in the production of various other products. The US has several fishing vessels, but most of these vessels fish for the international market and not for the two processing plants in the US. The majority of the skipjack tuna caught by the US fishing fleet is exported to processing companies for canning and loining in Bangkok or Latin America. It is however suggested that there are supply arrangements between US vessels and the main producers of canned tuna in the US, which implies some form of vertical integration.[7] The supply chain of canned skipjack tuna in Ecuador and Spain have the highest degree of vertical integration. The major companies in Ecuador and Spain are involved in fishing and processing and often have their own consumer brands. Spain furthermore also imports large volumes of pre-cooked loins for its domestic canning industry.[8]

The most important differences for the selected markets for skipjack tuna are the number of consumer brands and the competition between private labels of canned skipjack tuna. In Japan there is only one important canned skipjack tuna brand (Sea Chicken) which accounts for 60-70% market share (FFA, 2011). In the US there are three consumer brands that dominate the market (Starkist, Bumble Bee and Chicken of the Sea) together good for 80% market share in 2010 (Melbourne, 2010). In the EU market there are several different consumer brands per country with some consumer brands having a significant market position in different EU countries (e.g. John West and Princes). In the EU private label skipjack canned tuna has a more prominent position than in Japan and the US. Germany, for instance, is dominated by private label canned tuna, while in Spain private labels had a 65% share of the market in 2009.[9]

2.2.3 Selected skipjack canned tuna companies

The sector overview and analysis of the supply chain characteristics in the selected countries led to the identification of specific companies for further analysis. The companies active in the skipjack tuna supply chain that were selected for further analysis are listed in Table 4. Major subsidiaries have also been listed.

6 Atuna.com, http://www.atuna.com/index.php/fishing/tuna-catching-data-registerd viewed at 28-07-2014
7 FFA, Market and Industry Dynamics in the Global Tuna Supply Chain, 2011.
8 FFA, Market and Industry Dynamics in the Global Tuna Supply Chain, 2011.
9 FFA, Market and Industry Dynamics in the Global Tuna Supply Chain, 2011.

Table 4
Skipjack canned tuna companies selected for further analysis

#	Company name	Notable subsidiaries	Public	SX
1	Albacora S.A. (Albacora Group)		No	
		Salica Industria Alimentaria S.A.	No	
		Salica Alimentos Congelados S.A.	No	
		Salica Ecuador S.A.	No	
2	Alliance Select Foods International, Inc.		Yes	Manila
		PT International Alliance Food Indonesia	No	
3	The Bolton Group		Yes	London (suspended)
4	Bumble Bee Foods LLC		No	
5	Century Canning Corp.		No	
		Century pacific foods	Yes	Manila
		Century International (China) Co., Ltd.	No	
		General Tuna Corp.	No	
6	Dongwon Industries Co., Ltd.		Yes	Seoul
		Starkist	No	
7	F.C.F. Fishery Co., Ltd.		No	
		FCS Trading and Fishery (PTE) Ltd.	No	
		F.C.N. International Co., Ltd.	No	
8	Frinsa del Noroeste S.A.		No	
9	Grupo Conservas Garavilla Sociedad Limitada		No	
10	Hagoromo Foods Corp.		Yes	Tokyo
		PT Aneka Tuna Indonesia	No	
11	Itochu Corp.		Yes	Tokyo
		PT Aneka Tuna Indonesia	No	
12	Jealsa Rianxeira S.A.		No	
		Escuris S.A.	No	
		Sant Yago	No	
		Mare Aperto	No	
13	Kyukuyo Co., Ltd.		Yes	Tokyo
		Kyokuyo Suisan Co., Ltd.		
14	Luis Calvo Sanz S.A. (Grupo Calvo)		No	
15	Maruha Nichiro Corp.		Yes	Tokyo
		Taiyo A&F Co., Ltd.	No	
		Kingfisher Holdings	No	
16	Mitsubishi Corp.		Yes	Tokyo
		Princes, Ltd.	No	
17	RD Corp.		No	
		Philbest Canning Corp.	No	
18	Thai Union Frozen Products PCL		Yes	Bangkok
		Chicken of the Sea, Inc.	No	
		PT Juifa International Foods	No	
		MW Brands	No	
19	Thunnus Overseas Group (TOG)		No	
20	Tri Marine Holdings Cooperatief U.A.		No	
		Tri-Marine International Pte., Ltd.	No	

2.2.4 Identified trends

Market consolidation

The canned tuna sector is a mature and consolidated sector. As a result there appears to be a continuous interest in optimising supply and processing chains. In recent years several companies included in this study have either sold stakes to competitors or have bought into a company where there are opportunities to grow and expand into new markets. The Bolton Group, for example, reportedly Europe's largest branded tuna company, bought a 40% stake in the Spanish Calvo Group as well as an undisclosed stake in global tuna giant Tri-Marine. This has helped the Bolton Group to secure its position in Europe while also giving it access to new markets, like Brazil.[10] Through Tri Marine, Bolton will have access to Tri Marine's global markets and distribution channels, including the US, where Tri Marine is currently building a new cannery. Both Tri Marine and Bolton have Italian CEO's who have done business together for a long time based on close commercial and personal relationships, according to the press release announcing the tie-up. There are also media reports that Bolton is eyeing Mitsubishi's Princes, which would give Bolton a foothold in the UK market.

Thai Union is also actively purchasing stakes in companies that produce canned tuna in Europe. In 2010 the company purchased MW Brands, based in France, from private equity firms. It is also reported to be a potential buyer of Bumble Bee, currently held by private equity firm Lion Capital. The Bolton Group has also been mentioned as a potential buyer. In Asia, Hagoromo Foods is a notable example of a company that holds minor shares in some of the other companies in its sector. In addition to holding 8% of its own shares, the company also has interests in Thai Union Frozen Products, Mitsubishi and Itochu.

Changes in the EU Generalised Scheme of Preferences (GSP)
Changes in the GSP for countries have important effects on the supply of raw material for canned tuna to the EU market. For instance, the Ecuadorian tuna industry has been benefiting from a 0% import tariff import (GSP+) in previous years, and was an important supplier of pre-cooked loins and canned tuna to the EU market. The preferential agreement has been an important contributor to the expanding tuna industry in Ecuador. In 2014 this preferential agreement was discontinued. However, recently Ecuador joined Peru and Colombia in a trade agreement with the EU. As a result of this trade agreement Ecuador has the opportunity to maintain its preferential access to the EU market.[11] Another important development is that the Philippines are about to receive preferential status from the EU (GSP+). This will mean that the Philippines will benefit from a 0% import tariff for pre-cooked loins and canned tuna.

Product development and value addition
Canned tuna is one of the most consumed fish products globally. In the past, product innovation has resulted in several new products and applications of canned tuna. This together with the diversification into other species (e.g. sardines and mackerel) suitable for canning has created a category of shelf-stable seafood products.[12] These developments have been important to deal with increased raw material prices. Compared to other animal products canned tuna is still a relatively cheap source of animal protein. However, raw material prices are expected to increase further in the future. As a result, processors will continue to search for possibilities to add value to canned tuna. In the long term this may also mean that the raw material for canned tuna will be used for other value added products (e.g. small loins or steaks).

Increased competition between private label and consumer brands
Within the entire range of seafood products, canned tuna has one of the highest diversity of consumer brands.[13] These consumer brands are facing increasing competition from private label canned tuna. Retailers use consumer brands to attract consumers. At the same time they often position their private label canned tuna at a slightly lower price. This makes their private label financially more attractive to consumers. In some EU countries (e.g. Spain and Germany) private label canned tuna has a significant market share.

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10 ATuna, 'Firming Bolton-Tri Marine Alliance Step To New Acquisitions,' (9 October 2013) http://www.atuna.com/NewsArchive/ViewArticle.asp?ID=13509 (8 July 2014).

11 ATuna, 'EU confirms conslusion trade agreement with Ecuador (18 July 2014) http://www.atuna.com/index.php/2-news/1260-eu-confirms-conclusion-trade-agreement-with-ecuador (23 July 2014).

12 Rabobank, Spotlight on Seafood, Rabobank Industry Note #288, 2011.

13 Rabobank, Spotlight on Seafood, Rabobank Industry Note #288, 2011.

Conclusion on trends
The trend towards market consolidation reveals that the canned sector is a mature well-developed industry. There is only a small number of large companies that dominate the market, and the production process and the final product are relatively homogenous. Availability of raw material is currently not a major bottleneck for the canned tuna industry. However, the identified changes in the GSP show that access to raw material remains an essential issue for the sector.

2.3 Cultured shrimp

2.3.1 Sector overview

In 2012, global cultured shrimp production amounted to 4.3m tonnes.[14] The most important species were Pacific White Shrimp (*P. vannamei*) and black tiger shrimp (*P. monodon*). Each species accounted for respectively 3.2m and 0.9m tonnes. Tropical shrimp farming is concentrated in Asia (3.7m tonnes) and South and Central America (0.5m tonnes). South America countries have traditionally cultured Pacific White Shrimp while Asia originally cultured black tiger shrimp. However, since the beginning of the 21st century most Asian countries have shifted to Pacific White Shrimp because of its higher productivity compared to black tiger shrimp. This Asian shift towards Pacific White Shrimp caused a steep increase in production that stabilised last year as a result of the EMS syndrome and the resulting crop failures in especially Thailand and Vietnam. Shrimp production is expected to further increase in the coming years, particularly in India but also in countries such as Bangladesh and Myanmar. The main drivers of this growth are the shift to Pacific White Shrimp in India, the intensification of production systems in Bangladesh and the opening up of the economy in Myanmar.

China is by far the largest shrimp producer in Asia, accounting for 1.6m tonnes in 2012.[15] Although Thailand has traditionally been the second largest shrimp producer (600,000 tonnes in 2012), Vietnam, Indonesia and India are catching up (respectively 489,000, 370,000 and 270,000 tonnes in 2012) as a result of their recent transition from black tiger to Pacific White Shrimp. Vietnam and Indonesia already started this transition in 2005-2006, while India first allowed the commercial production of Pacific White Shrimp in 2011. Since the production of Pacific White Shrimp takes place in more intensive production systems and requires more inputs and capital, the shift from black tiger to Pacific White Shrimp production during the last decade has resulted in an increase in the share of medium and large size producers in the total shrimp production.

According to the most recent figures, in 2011, global shrimp exports (including cold and warm water shrimp) were valued at USD18bn. Thailand, Vietnam, India and Indonesia contributed USD3.6, 2.4, 1.6 and 1.3bn respectively.[16] Exporters choose their markets based on a number of variables including import duties, buyer requirements on certification, species preferences, prices and shipping costs. For all selected production countries the three main markets are Japan, the US and the EU. In 2011 the US accounted for USD3.3bn, Japan for USD2.2bn and the EU for USD1.5bn. Although the share of China in the total export value of the four selected production countries was still limited in 2011 (USD206m), China is of increasing interest for mainly higher grade shrimp products which are popular on the Chinese market.

The increase in production of cultured shrimp is mainly absorbed by emerging middle classes developing countries, especially China while consumption in mature shrimp markets in Europe, the US and Japan remains relatively stable. Of the three selected markets in this study the US is the largest market followed by Japan and the EU.

14 FAO FIGIS 2014.
15 FAO FIGIS 2014.
16 COMTRADE/Trademap.

2.3.2 Supply chain characteristics

Figure 4 provides the most important steps in the shrimp supply chain. The most important inputs for the production of shrimp are Post Larvae (PL) and feed. PL are generally produced by medium and small size enterprises that operate hatcheries. Although PL are a key production factor, their share in the total cost of production is relatively small. Feed accounts for approximately 70% of the production cost and therefore has a large impact on the cost of production. Feed companies are mainly large multinational companies that are not specialised in shrimp, but more generally in aqua-feeds and often also have activities in other animal feed sectors such as poultry. Major players in the shrimp feed sector are Charoen Popkhand (CP), Skretting (Nutreco) and Grobest.

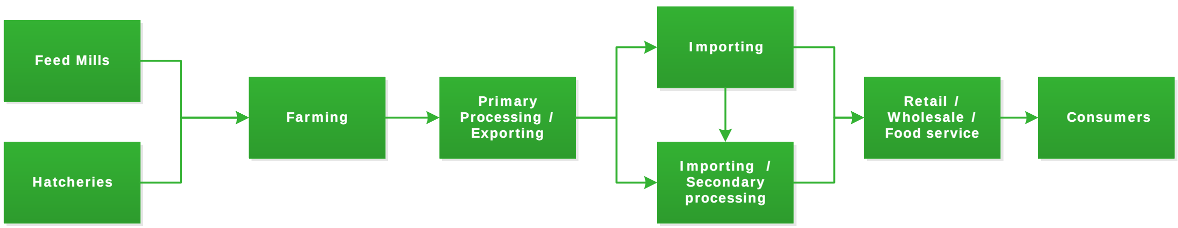

Figure 4 *Segments of the shrimp supply chain*

Production system characteristics vary widely according to the farmed species and the natural environment in each of the four production countries. However, Pacific White Shrimp, which is the most important cultured species in the selected countries, is mostly produced by intensive commercially operated farms. In some cases farms are operated independently. However, in most cases shrimp farms are either linked to processing companies through formal or informal contract agreements or are vertically integrated into the processing company's supply chain.

The types of processing companies in the selected production countries vary as much as the production systems. While the shrimp processing industry in Thailand is dominated by large industrial groups such as CP and Thai Union, in India processing is dominated by small, medium and large family run businesses. In Vietnam shrimp processing companies are in many cases joint ventures with the government or a part of larger groups active in the fisheries industry.

Traditionally primary processors limited their processing activities to basic methods including peeling and freezing. Nowadays processors in each of the four production countries increasingly have processing activities that were previously undertaken by secondary processors in the end markets. These are activities such as cooking, breading and marinating the shrimp products. To integrate these higher value-adding activities into the primary processing plants the companies in the producing countries have had to invest more in processing machinery. Although this higher degree of value-adding is already more common in Thailand and for some companies in Indonesia and Vietnam, in India this higher degree of value-adding has only been increasing in recent years. This can mainly be explained by India's increasing market share in the US market and the demand in the US for value-added Pacific White Shrimp products.

Although an increasing number of primary processors are also involved in farming, most only focus on purchasing, processing and exporting. It is mainly the exporters that supply to high end markets that are forced to get involved in farming in order to secure their supply of high quality (and often certified) raw material. Although Thailand may be an exception, in general most primary processors in the other producing countries share the opinion that shrimp farming (contrary to e.g. pangasius farming) is a high risk activity and therefore should not be integrated into the company. As a result, although the share is reducing the main supply of shrimp is still accounted for by small, medium and large size independent farms.

Secondary processors and importers also vary widely in their characteristics. EU shrimp importers are all relatively small with the volumes of important importers ranging from approximately 5,000 tonnes (mainly Western European importers) to approximately 15,000 tonnes (mainly in Southern Europe).

The US shrimp market is more consolidated with a small number of large players such as Red Chamber, Chicken of the Sea (Thai Union) and National Fish and Seafood. The Japanese market is even more consolidated with large companies such as Maruha Nichiro, Nissui, Itochu and Marubeni dominating. Japanese companies generally do not only source for their domestic market but also distribute to other markets outside Japan. The largest players in the shrimp industry such as CP, Thai Union, Min Phu and Devi Marine are fully integrated companies that are involved in all parts of the supply chain.

2.3.3 Selected Shrimp companies

The sector overview and analysis of the supply chain characteristics in the selected countries led to the identification of specific companies for further analysis. The companies active in the shrimp supply chain that were selected for further analysis are listed in Table 5. Major subsidiaries have also been listed.

Table 5
Shrimp companies selected for further analysis

#	Company name	Notable subsidiaries	Public	SX
21	Charoen Pokphand Foods PCL		Yes	Bangkok
		Charoen Pokphand Foods PLC	Yes	Bangkok
22	Devi Seafoods		?	
23	Japfa Comfeed Indonesia Tbk PT		Yes	Jakarta
		PT Suri Tani Pemuka	No	
24	Marubeni		Yes	Tokyo
		Eastern Fish Company	?	
25	Maruha Nichiro Corp.		Yes	Tokyo
		Seafood connection	No	
26	Minh Phu Seafood Corp.		Yes	Ho Chi Minh
		MSeafood Corp.	No	
27	Mitsubishi Corp.		Yes	Tokyo
		Princes, Ltd.	No	
28	Nippon Suisan Kaisha, Ltd. (Nissui)		Yes	Tokyo
29	Nutreco NV		Yes	Amsterdam
		Skretting	No	
		Tomboy	No	
30	Pacific Andes International Holdings, Ltd.		Yes	Hong Kong
		National Fish & Seafood	Yes	Hong Kong
31	Parlevliet & Van der Plas			
		Heiploeg International	No	
32	Pescanova S.A.		Yes	Madrid (suspended)
		Krustanord	Yes	Madrid
33	PT Central Proteinaprima Tbk (CP Prima)		Yes	Jakarta
34	PT Sekar Bumi Tbk		Yes	Jakarta
35	PTN Group		No	
		Phatthana Seafoods Co., Ltd.	No	
		Phatthana Frozen Food Co., Ltd.	No	
		Chanthaburi Seafoods Co., Ltd.	No	
		Chanthaburi Frozen Food Co., Ltd.	No	
36	Surapon Foods PCL		Yes	Bangkok
37	Thai Union Frozen Products PCL		Yes	Bangkok
		Thai Union Feedmill Co., Ltd.	Yes	Bangkok Tokyo
		PakFood Public Company, Ltd.	Yes	Bangkok
		Avanti Feeds, Ltd.	Yes	Bangkok
		Chicken of the Sea	No	
38	Uni-President Enterprises Corp.		Yes	Taipei

2.3.4 Identified trends

Shift from black tiger to Pacific White Shrimp continues

Although Pacific White Shrimp has traditionally been cultured in South America, in Asia it is a non-native species. However, the advantages of growing Pacific White Shrimp, less disease prone and higher productivity, has gradually motivated governments in Asia to introduce the species in their shrimp sectors. Thailand started in the early 21st Century and a few years later Vietnam, Malaysia and Indonesia followed. Most recently India allowed their farmers to grow Pacific White Shrimp. Although in the early stages the transition to Pacific White Shrimp resulted in a huge increase in production, in recent years also Pacific White Shrimp has proven to be disease prone after the EMS outbreaks hampered further increase of production.

The shift to Pacific White Shrimp has transformed the Asian shrimp farming sector to a more high tech and capital intensive level. This is mainly due to the fact that Pacific White Shrimp is produced in more intensive production systems in order to achieve the highest yields. The level of intensity differs from country to country. While in Thailand the largest part of production takes place in super intensive systems, in India, Vietnam and Indonesia, production also takes place in semi-intensive production systems.

Increasing vertical integration

The cultured shrimp sector is still highly fragmented. This is especially the case on the farming level. However, vertical integration is on the rise since most producers have shifted to Pacific White Shrimp. Processors that trade Pacific White Shrimp increasingly start their own farms in order to secure supply to their factories. Although the production of Pacific White Shrimp is more capital and technological intensive and requires larger investments, production of Pacific White Shrimp is less risky because of the higher disease resistance compared to black tiger shrimp. The lower risks motivate processors to integrate farming in their activities. Although still limited, the lower risk profile of Pacific White Shrimp farming also increases the willingness of financial institutions and private investors to provide capital. Although there are exceptions (e.g. CP), vertically integrated companies in the shrimp sector are often still limited to production in one country (e.g. Min Phu in Vietnam, Devi Fisheries in India, or BMI in Indonesia).

Importance of smallholder farmers

Although shrimp production is increasingly vertically integrated in the activities of processors, smallholder farms remain important. Their share in production is decreasing, but small holders still produce a significant share of the total shrimp production and will continue to do so in the future. In order to meet market demand and to keep factories running, processors need to continue to engage with them.

Although processors neglected to engage in sustainable sourcing strategies with smallholders that produced black tiger shrimp, it seems that the willingness to do so increases when farmers produce Pacific White Shrimp. The main explanation is that processors engaged in contract farming (formal or informal) arrangements where they provide inputs like capital, seeds and feed to farmers face less risks when the farmer produces Pacific White Shrimp. In this perspective, the transition to Pacific White Shrimp offers renewed opportunities for developing inclusive supply chains where smallholder farmers are an integral part of sustainable inclusive business models of shrimp processors and traders.

Growing market consolidation

Although the cultured shrimp sector is a relatively immature sector with many small players, consolidation is taking place. Large companies that traditionally focussed on other parts of the seafood industry, such as tuna or pelagic fishing or salmon aquaculture, are now also involved in the shrimp industry. Examples of these companies are Maruha Nichiro, Nissui, Pacific Andes, Thai Union, Pescanova, Parlevliet & Van de Plas and the Red Chamber company). These companies increase their activities in the shrimp industry mainly by taking over local processing and distribution companies that are already focussing on shrimp but also by directly sourcing shrimp from suppliers and selling to customers.

Conclusion on trends

The cultured shrimp sector is still a relatively immature sector that is in development. The shift from black tiger shrimp to Pacific White Shrimp can be seen as a good example of the developing character of the shrimp sector. Although consolidation is taking place, there is still a large number of smallholder farms that together play an important role in the sector. The importance of smallholder farms and the high risk of crop failure (e.g. diseases such as EMS) result in a sector with a high-risk profile.

2.4 Soy and beef

2.4.1 Soy

2.4.1.1 Sector overview

Soy yields more protein per hectare than almost any other crop[17] and has the potential to play a key role in addressing the challenges of global food security,[18] especially with global demand for protein expected to increase steadily as the world's population gets larger and wealthier.[19]

Global soybean production has expanded rapidly in recent times from around 105m tonnes in 1990 to approximately 268m tonnes in 2012 with the large majority of the supply (approximately 80%) coming from just three countries, namely Brazil, the US, and Argentina.[20] This large increase in production has been realised through a rapid expansion of the area devoted to soy cultivation, rather than through productivity gains.[21] The total area dedicated to soy cultivation globally has risen from roughly 54m hectares in 1990 to around 109m hectares in 2012.[22] The largest increases in production have occurred in South America, where production grew by 123% between 1996 and 2004.[23] In Brazil, for example, 10m additional hectares of land was converted to soy production between 2000 and 2010, an increase of 73%.[24] Statistics on soy production and area harvested for the calendar year 2012 are included in Table 6 while statistics on soybean meal and soybean oil production are included in Table 7. While Paraguay was the sixth largest producer of soybeans in 2012 its production remains relatively small compared to the global leaders.

Table 6

2012 statistics on soybean production and area harvested[20]

Soybeans					
Production	(1,000 tonnes)	% of total	Area harvested	(1,000 ha)	% of total
US	82,651	31	US	30,823	28
Brazil	82,000	31	Brazil	27,700	25
Argentina	49,300	18	Argentina	19,400	18
China	13,050	5	India	10,800	10
India	11,500	4	China	7,172	7
Paraguay	8,300	3	Paraguay	3,000	3
Total	267,983	100	Total	109,282	100

17 Van Gelder, J.W. & Kuepper, B. (2012). Verdeling van de economische waarde van de mondiale sojateelt, Profundo.

18 WWF. (2014) The Growth of Soy: Impacts and Solutions, WWF International, Gland, Switzerland.

19 KPMG (2013) A roadmap to responsible soy: Approaches to increase certification and reduce risk. Sustainable Insight, KPMG, in collaboration with IDH, WWF, FMO and IFC.

20 KPMG (2013) A roadmap to responsible soy: Approaches to increase certification and reduce risk. Sustainable Insight, KPMG, in collaboration with IDH, WWF, FMO and IFC.

21 Nassar, A. and Antoniazzi, L.B. (2011). Soy strategic Gap Analysis: Brazil and Argentina. ICONE.

22 USDA-FAS (Unites States Department of Agriculture - Foreign Agricultural Service) Database. Data obtained via http://apps.fas.usda.gov/psdonline/psdDownload.aspx. Last updated 11/07/2014. Downloaded 15 July 2014.

23 WWF. (2014) The Growth of Soy: Impacts and Solutions, WWF International, Gland, Switzerland.

24 KPMG (2013) A roadmap to responsible soy: Approaches to increase certification and reduce risk. Sustainable Insight, KPMG, in collaboration with IDH, WWF, FMO and IFC.

Table 7

2012 statistics on soybean meal and soybean oil production[20]

	Soybean meal			Soybean oil	
Production	(1,000 tonnes)	% of total	Production	(1,000 tonnes)	% of total
China	51,440	28	China	11,626	27
US	36,174	20	US	8,990	21
Brazil	27,310	15	Brazil	6,760	16
Argentina	26,089	14	Argentina	6,364	15
EU	10,194	6	EU	2,317	5
Paraguay[25]	2,310	2	Paraguay[22]	565	1
Total	180,951	100	Total	42,896	100

International trade in soybeans includes the import and export of its two main derivatives, soybean meal and soybean oil. In 2012,[26] 100m tonnes of soybeans were exported, around 37% of the worldwide harvest, together with 58m tonnes of soybean meal and 9m tonnes of soybean oil. The most important exporting countries of soybeans, soybean meal and soybean oil are the US, Brazil and Argentina. While the US has traditionally been the largest exporter of soybeans, Brazil was the largest exporter in 2012. Brazilian exports have increased rapidly in recent years, mainly due to increased demand from China. Argentina has a relatively large well-developed crushing sector and exports large quantities of soybean meal and soybean oil as a result. Paraguay is the fourth largest exporter of soybeans, directly exporting the majority of its production as whole soybeans, a large percentage of which is transported to Argentina for processing.

China and the EU are the most important importers of soy and its derivatives. China is responsible for around 60% of total global imports of soybeans while the EU imports around 30% of the supply of soybean meal. Soybean oil is imported in much smaller quantities by a larger number of countries however China is the leading importer, importing approximately 17% of the total. While Japan imports only a small amount of soy, Japanese companies are active in servicing the Chinese market. Table 8 provides trade statistics with countries selected for this project highlighted.

Table 8

2012 soybean, -meal and -oil export/import statistics[27]

Soybeans					
Exports	(1,000 tonnes)	% of total	Imports	(1,000 tonnes)	% of total
Brazil	41,904	42	China	59,865	62
US	35,913	36	EU	12,506	13
Argentina	7,738	8	Mexico	3,409	4
Paraguay	5,518	6	Japan	2,830	3
Uruguay	3,528	4	Taiwan	2,286	2
Total	100,650	100	Total	95,708	100
Soybean meal					
Exports	(1,000 tonnes)	% of total	Imports	(1,000 tonnes)	% of total
Argentina	23,667	15	EU	16,943	32
Brazil	13,242	8	Indonesia	3,367	6
US	10,083	6	Vietnam	2,980	6
India	4,354	3	Thailand	2,874	5
Paraguay	2,149	1	Iran	2,099	4
Total	15,7761	100	Total	53,779	100

25 The dotted line indicates that Paraguay was not the 6th largest producer of soybean meal and oil, as was the case for soybeans. For soybean meal and oil it was the 8th largest producer in 2012.

26 USDA-FAS (Unites States Department of Agriculture - Foreign Agricultural Service) Database. Data obtained via http://apps.fas.usda.gov/psdonline/psdDownload.aspx. Last updated 11 July 2014. Downloaded 15 July 2014.

27 USDA-FAS (Unites States Department of Agriculture - Foreign Agricultural Service) Database. Data obtained via http://apps.fas.usda.gov/psdonline/psdDownload.aspx. Last updated 11 July 2014. Downloaded 15 July 2014.

Soybean oil					
Exports	(1,000 tonnes)	% of total	Imports	(1,000 tonnes)	% of total
Argentina	4,244	46	China	1,409	17
Brazil	1,251	13	India	1,086	13
EU	1,013	11	Algeria	575	7
US	982	11	Iran	543	6
Paraguay	558	6	Bangladesh	397	5
Total	9,318	100	Total	8,431	100

2.4.1.2 Supply chain characteristics

The most important segments of the soy supply chain are soybean production (including inputs), primary processing or crushing (pre- and post- export/import), secondary processing (pre- and post- export/import - by the animal feed industry in particular) and retail (see Figure 5). While whole soybeans are used to produce a variety of foodstuffs the large majority of soybeans are crushed to produce protein rich soybean meal and -oil. Soybean meal is the end-product of around three-quarters of the world's soy.[28] Soybean meal is primarily used to produce animal feed with increasing demand from the animal feed sector as the key driver of the expansion of soy production in recent years.[29] The increase in demand for animal feed is a direct result of the increasing demand for, and consumption of, meat globally.

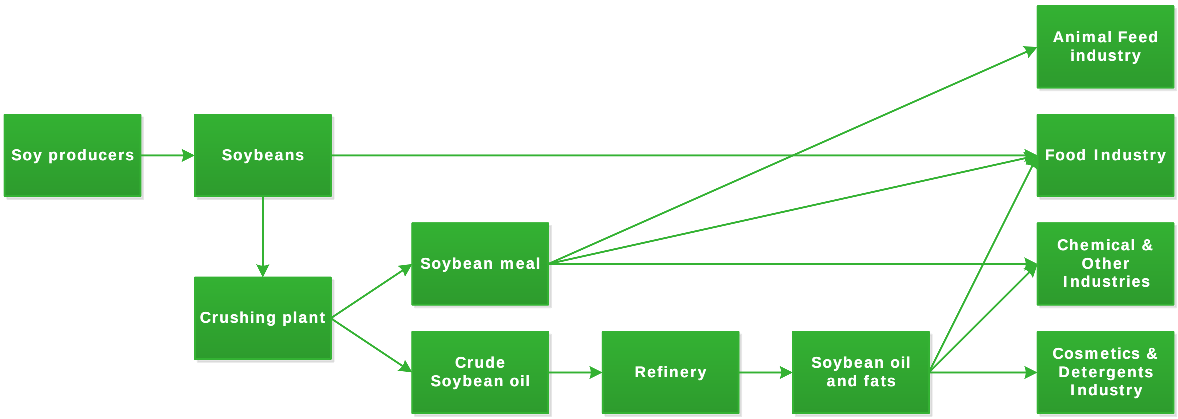

Figure 5 *Simplified schematic outline of the soybean supply chain*[30]

The soy supply chain is a global supply chain and the dynamics of the chain are influenced by a range of factors including trade restrictions and barriers, quality preferences in terms of genetically-modified (GM) crops and sustainability standards and transport and logistics considerations. As a result different countries and regions are involved in different segments of the chain to varying degrees with slight differences in the characteristics of local supply chains.

Brazil and the US for example, the two largest producers of soybeans, export large quantities of whole soybeans to China where they are crushed locally while Argentina has a well-developed crushing sector and exports large amounts of soybean meal and soybean oil to the EU. The Chinese government effectively banned the import of soybean meal and placed restrictions on imports of soybean oil, particularly from Argentina, in the hope of stimulating its domestic crushing sector. While Brazil and the US have benefited from the increase in Chinese demand for whole soybeans the

28 WWF. (2014) The Growth of Soy: Impacts and Solutions, WWF International, Gland, Switzerland.

29 KPMG (2013) A roadmap to responsible soy: Approaches to increase certification and reduce risk. Sustainable Insight, KPMG, in collaboration with IDH, WWF, FMO and IFC.

30 Adapted from: Kamphuis, B., E.J.M.M Arets, C. Verwer, J. van den Berg, S. van Berkum and B. Harms (2011). Dutch trade and biodiversity. The biodiversity and socio-economic impacts of Dutch trade in soya, palm oil and timber. LEI report 2011-013 and Alterra report 2155. The Hague, LEI, Wageningen UR.

position taken by the Chinese has not only led to increased domestic crushing margins but also to significantly higher soybean meal costs for the Chinese meat industry and increased competition for raw materials at origin.[31]

The development of certification programmes for non-GM and/or sustainably produced soybeans, mainly under pressure from European consumers, has created a differentiated soybean market that offers producers a premium if they can verify that their product meets certain attributes. The largest certification programme for non-GM soybeans is *CERT-ID* while the two major certification standards for environmentally responsible production are *Proterra* and the *Roundtable for Responsible Soy (RTRS).*[32] The ability of producers to access the differentiated market is reliant upon them having access to a supply chain that can verify and segregate 'high quality' soybeans that conform to the standard from those that do not. If they are unable to do this producers must sell on the mass market where there is no preference for how soybeans are produced. The late introduction of GM soybean varieties and the historical provision of non-GM soybeans to the EU by Brazil has meant that Brazil has developed reasonably segregated supply chains which, in turn, has facilitated access to the differentiated markets for environmentally responsible produced soybeans.[31] For other countries, such as Argentina and Paraguay, that have not developed the same segregated supply chain infrastructure or no longer produce non-GM soybeans, accessing the differentiated markets is more challenging. This, and other supply chain limitations, such as the less-than-expected demand for certified soy, are being remedied through marketing mechanisms such as 'mass balance' and 'credit trading' but heavy investment is needed in the early stages of the chain to create the separate storage and processing capacity.[30] In order to overcome the limitations of supply chain infrastructure companies are expanding and integrating their operations both horizontally and vertically.

While processed soybeans (soybean meal and oil) are used to produce a wide range of consumer products, a large percentage is used by the animal feed industry to produce compound animal feed. The European animal feed industry consists of a large number of companies (in the Netherlands there are more than 100)[33] that are active on a national or European level. The larger multinational meat companies that produce their own animal feed are less active in Europe relative to other markets while information on the Chinese animal feed industry is not readily available. The meat supply chains (beef, poultry, chicken) are therefore an extension of the supply chain with large meat companies playing a significant role through their increasing demand for protein-rich animal feed. Large retailers form the direct link to the consumer and play an important role in communicating the preferences of consumers to and setting demands upon their suppliers in terms of the sourcing of the soy that is used to produce the consumer products that they sell.

2.4.2 Beef

2.4.2.1 Sector overview

Global demand for meat is increasing as expanding middle classes in emerging markets adopt more protein-rich diets. While beef was the most popular meat of choice 50 years ago, it is now the third most widely consumed meat in the world accounting for around 25% of meat production worldwide, after pork and poultry at 38% and 30% respectively.[34] Meat consumption in the EU and the US is growing slowly, even stagnating, while growing economies in Asia and elsewhere (including China and Russia) are expecting growth in the meat sector of up to 80% by 2022.[35] Table 9 lists the leading producers of beef with focus countries for this study highlighted. As Table 9 shows Brazil and

[31] Dominguez, J. Business potential and challenges from the private sector persepective. FAO powerpoint presentation on Argentinian crushing sector, available at: http://www.fao.org/fileadmin/templates/tci/pdf/presentations/Jorge_Dominguez_-_Private_sector.pdf

[32] Garrett, R., Rueda, X. & Lambin, E. (2013) Globalization's unexpected impact on soybean production in South America: linkages between preferecnes for non-genetically modified crops, eco-certifications, and land use, Environ. Res. Lett. 8, 044055.

[33] Nederlands Sojacoalitie, Soja Barometer 2012.

[34] USDA-FAS (United States Department of Agriculture - Foreign Agricultural Service), Livestock and Poulty: World markets and Trade, November 2013.

[35] Maennel, A. 2014. Meat Atlas. Heinrich Böll Foundation and Friends of the Earth Europe. Available at http://www.foeeurope.org/sites/default/files/publications/foee_hbf_meataltas_jan2014.pdf

Argentina are the second and sixth largest producers of beef globally. While Paraguay falls outside the top eleven countries listed, beef production is considered an important sector in its economy. In 2013 Paraguay was expected to produce 460,000 tonnes, carcass weight equivalent (cwe).[36]

Table 9
Largest beef and veal producers 2011-2013[37]

Country	2011 (x 1,000 tonnes, CWE)		2012 (x 1,000 tonnes, CWE)		2013 (x 1,000 tonnes, CWE)	
US	11,983	21%	11,849	21%	11,757	20%
Brazil	9,030	16%	9,307	16%	9,675	16%
EU	8,114	14%	7,708	13%	7,470	13%
China	5,550	10%	5,540	10%	5,637	10%
India	3,244	6%	3,450	6%	3,850	6%
Argentina	2,530	4%	2,620	5%	2,850	5%
Australia	2,129	4%	2,152	4%	2,359	4%
Mexico	1,804	3%	1,821	3%	1,808	3%
Pakistan	1,536	3%	1,587	2%	1,630	3%
Russia	1,360	2%	1,380	2%	1,370	2%
Canada	1,140	2%	1,064	2%	1,035	2%
Others	9,002	15%	9,145	16%	9,179	16%
TOTAL	57,422	100%	57,623	100%	58,620	100%

The largest beef exporters are listed in Table 10. Brazil is the leading exporter followed by India, Australia and the US. Major export markets for Brazilian exporters include Russia, the European Union and China. Argentina was the world's third largest exporter of beef in 2005 exporting 771,000 tonnes (cwe). By 2013 Argentina had dropped to eleventh place exporting just 186,000 tonnes (cwe). This sharp decrease has been the result of policy measures first implemented by the Argentinian government in 2006. In an attempt to lower the domestic price of beef the government banned beef exports for 180 days, imposed a 15% export tax on fresh beef (a tax still in force today) and put in place domestic price controls. Domestic prices dropped however the export industry suffered. The government assumed ranchers and farmers would continue to raise cheap beef but instead they cut their herds and converted their pastures to soybean production. Attempts to rebuild the sector resulted in production levels reaching their highest point in 2013 since 2009. Beef production in Argentina could be higher still, but the significantly reduced export business discourages producers from marketing heavy cattle encouraging them to instead finish cattle at lighter weights and higher prices. These younger and lighter cattle are typically demanded by the domestic market which accounts for up to 93% of supply.[38]

36 USDA GAIN (United States Department of Agriculture Global Agricultural Information Network) Paraguay Livestock and Products Annual 2012.

37 USDA-FAS (United States Department of Agriculture Foreign Agricultural Service) Beef and Veal summary selected countries. Created 18/04/2014. Available at http://apps.fas.usda.gov/psdonline.psdhome.aspx

38 USDA GAIN (United States Department of Agriculture Global Agricultural Information Network), Argentina Livestock and Products Annual 2012.

Table 10

Main exporters of beef and veal 2011-2013[39]

Country	2011		2012		2013	
	(x 1,000 tonnes, CWE)		(x 1,000 tonnes, CWE)		(x 1,000 tonnes, CWE)	
Brazil	1,340	17%	1,524	19%	1,849	20%
India	1,268	16%	1,411	17%	1,765	19%
Australia	1,410	17%	1,407	17%	1,593	17%
US	1,263	16%	1,113	14%	1,172	13%
New Zealand	503	6%	517	6%	529	6%
Uruguay	320	4%	360	4%	338	4%
Canada	426	5%	335	4%	333	4%
Paraguay	197	2%	251	3%	326	4%
EU	445	5%	296	4%	244	3%
Belarus	147	2%	156	2%	220	2%
Argentina	213	3%	164	2%	186	2%
Others	563	7%	630	8%	610	7%
TOTAL	8,095	100%	8,164	100%	9,165	100%

While Paraguay is a relatively small producer, it has benefited from the recent developments in Argentina becoming the third largest South American exporter behind Brazil and Uruguay. Paraguayan exports in 2013 were up to 326,000 tonnes (cwe). In their 2012 annual outlook on the Paraguayan beef sector the USDA forecast that Russia, which by mid-2012 accounted for 80% of the total export volume would continue to be the main export market for Paraguayan beef. With the closing of the Chilean market (Chile accounted for approximately 40% of Paraguay's total beef export volume and almost 50% of the export value in 2009 and 2010),[40] Paraguay has almost doubled its exports of chilled beef to Brazil. The EU banned Paraguayan beef imports in September 2011 due to an outbreak of foot-and-mouth-disease which is still in place.

The largest beef importers are listed in Table 11. Although the Russian government has been investing heavily in increasing the capacity of domestic livestock production it remains the largest importer of beef globally. Russian beef imports in 2012 were up by 3.3% compared to 2011 with Brazil accounting for 39.6%, Paraguay 19% and Belarus 16.6%.[41] China is one of the world's largest meat producers (see Table 10) however the meat that it produces is mostly for domestic consumption.[42] While pork and poultry dominate both Chinese production and consumption beef consumption is rising. This has led to an increase in beef imports, which has been further boosted by the effects of bird flu outbreaks on poultry consumption.[43] Australia has been China's largest beef supplier in recent times, accounting for over 50% of official imports in 2013,[1] however falls in Australian production due to drought has meant that Chinese importers have been forced to look to other markets to fill the gap. Brazil is one of the main exporters looking to service growing Chinese demand although the Chinese government suspended imports of Brazilian beef in December 2012 due to Brazil's confirmed outbreak of Bovine Spongiform Encephalopathy (BSE).

39 USDA-FAS (United States Department of Agriculture Foreign Agricultural Service) Beef and Veal summary selected countries. Created 18/04/2014. Available at http://apps.fas.usda.gov/psdonline.psdhome.aspx

40 USDA GAIN (United States Department of Agriculture Global Agricultural Information Network), Paraguay Livestock and Products Annual 2012.

41 USDA GAIN (United States Department of Agriculture Global Agricultural Information Network), Russia Livestock and Products Annual 2012.

42 Hanse, J. and Gale, F. 'China in the next decade: rising meat demand for growing imports of feed', USDA-ERS, published online on 7 April 2014.

43 Thukral, N. and Patton, D. 'China rounds up beef supplies to satisfy middle-class hunger', Reuters online, Published 18/03/2014, http://www.reuters.com/article/2014/03/18/china-beef-idUSL3N0LO2KU20140318

Table 11

Main importers of beef and veal 2011-2013[44]

Country	2011 (x 1,000 tonnes, CWE)		2012 (x 1,000 tonnes, CWE)		2013 (x 1,000 tonnes, CWE)	
Russia	994	15%	1,032	16%	1,031	14%
US	933	15%	1,007	15%	1,021	14%
Japan	745	12%	737	11%	760	10%
Hong Kong	152	2%	241	4%	473	6%
China	29	0%	99	1%	412	6%
EU	365	6%	348	5%	376	5%
South Korea	431	7%	370	6%	375	5%
Venezuela	195	3%	217	3%	325	4%
Canada	282	4%	301	5%	296	4%
Chile	180	3%	187	3%	245	3%
Mexico	265	4%	215	3%	232	3%
Others	1,842	29%	1,898	29%	1,877	25%
TOTAL	6,413	100%	6,652	100%	7,423	100%

The import of meat and meat products into the EU is subject to harmonised rules set by the European Commission, which acts on behalf of the 28 member states (Croatia became the 28th member state of the EU on 1 July 2013). These rules are aimed at guaranteeing that all imports into the EU fulfil the same high standards as products from EU member states. For meat and meat products, including beef, countries of origin must be on a list of eligible countries for each relevant product. The eligibility criteria address topics such as animal health standards and hygiene and public health requirements. Imports are only authorised from approved establishments and exporting countries have to apply for determination of their BSE status.[45] Complying with these food and safety requirements can make exporting beef and beef products to the EU difficult. A range of tariff barriers and third country (producing countries from outside the EU) supplier agreements are also in place, of which the ‘Hilton’ quota, a quota for duty-free high-quality beef, is an example. It grants export allowances to Argentina, Brazil and Paraguay, among others as compensation for European farmer subsidies,[46] although as mentioned previously a ban on Paraguayan imports is currently in place. In 2011 Brazil was the largest source of beef imported into the EU (39% of the total), followed by Argentina (19%).[47]

2.4.2.2 Supply chain characteristics

Figure 6 provides a simplified version of the global beef supply chain. Inputs, such as animal feed are an important factor in production.[48] This inextricably links the beef supply chain to the soy supply chain as soy is a primary ingredient in compound animal feed. Production at the farm level is followed by primary processing. While the export of live animals does occur the dynamics of this part of the supply chain differ in many respects from the trade in processed beef products. As a result this study does not take the trade in live animals directly into account meaning that primary processing primarily occurs in the country or region of production. Following primary processing comes secondary processing (pre- and post-export) by food service companies and distribution to final consumers through the wholesale and retail sectors.

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44 USDA-FAS (United States Department of Agriculture Foreign Agricultural Service) Beef and Veal summary selected countries. Created 18/04/2014. available at http://apps.fas.usda.gov/psdonline.psdhome.aspx

45 European Commission, ‘EU import conditions for fresh meat and meat products’, available at http://ec.europa.eu/food/international/trade/docs/im_cond_meat_en.pdf

46 Harris, C. ‘Hilton beef quota to EU going unused’, http://www.thebeefsite.com/news/43506/hilton-beef-quota-to-eu-going-unused.

47 European Commission Agriculture and Rural Development, ‘Review of the situation on the EU beef and veal market’, presentation given at Single CMO management committee, 22 March 2012.

48 John H. Dyck and Kenneth E. Nelson. Structure of the Global Markets for Meat. By Market and Trade Economics Division, Economic Research Service, U. S. Department of Agriculture, Agriculture Information Bulletin No. 785.

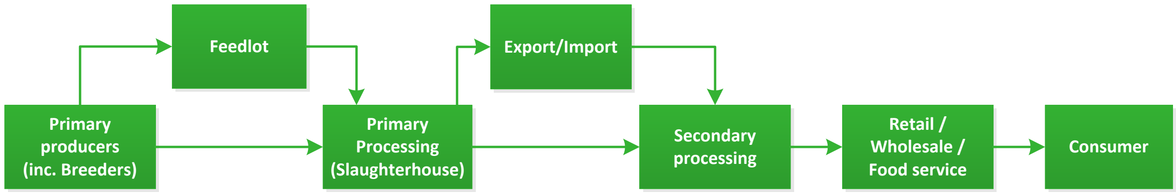

Figure 6 *A simplified version of the most important steps in the beef supply chain*[49]

Production preferences differ depending on local conditions. In Brazil production is still based on grass-fed animals although feedlot operations are becoming more of a reality due to the demand for a shorter production cycle, the result of increasing demand from foreign markets.[50] Feedlots are also a relatively recent addition in Argentina, however their adoption has been quick with up to 50% of Argentinian cattle estimated to have been finished in feedlot-type systems in 2012.[51]

The global trade in beef is a complex web of supply and demand, with trade flows between countries and regions determined largely by differences among countries in their resource base, their preferences for meat types and cuts, the extent and character of barriers to trade, and the industry structure. While global trade in beef has grown in recent decades, trading relationships can be affected by import/export barriers. The Uruguay Round (1995) of the GATT for example replaced a number of trade bans with tariff-rate quotas and lowered tariffs in a number of developing countries.[52] The admission of China to the WTO included provisions for opening up its meat markets to potential imports while trade within regional zones has also increased due to free-trade agreements such as the EU and MERCOSUR (Brazil, Argentina, and Uruguay). Sanitary standards also play an extremely important role in the trade of beef. The distinction between countries judged free of foot-and-mouth disease (FMD), and those judged not free, largely defines world trade in fresh, chilled, or frozen beef.[49] Brazil, Argentina and Paraguay have all been affected at different times by trade restrictions, as discussed in Section 2.4.1.

Russia's economy and agriculture are in transition and the institutions supporting livestock and meat markets are not yet fully developed. Domestically produced beef is often of low quality, essentially destined to further processing. There is a permanent shortage of animals which keeps prices very high. This chronic shortage of beef, the generally low quality of domestic cattle, the absence of major domestic investment in the sector (investment from Russian government is starting), and the high popularity of beef with consumers all mean that the Russian beef market will remain of major interest for beef importers and suppliers of services for the foreseeable future.[53]

The Chinese beef supply chain is undergoing a process of modernisation as a result of the changing preferences of Chinese consumers. While poultry and pork are still the most heavily consumed types of meat, beef, typically the more expensive, is becoming more attractive as livings standards improve. This process of modernisation involves the development of supermarket chains and refrigerated logistics capable of offering consumers a variety of beef products. The Chinese beef industry lacks dominant market leaders however both horizontal and vertical integration is expected as both domestic and foreign companies look to exploit the potential for growth.

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49 Adapted from Thankappan, S. & Flynn, A. (2006) Exploring the UK Red Meat supply chain, The centre for Business relationships, accountability, sustainability and society (BRASS) Cardiff University, UK.

50 Millen, D., Pacheco, R., Meyer, P., Rodrigus, P. & Arrigoni. M. (2011) 'Current outlook and future perspectives of beef production in Brazil', Animal Frontiers, vol. 1, no. 2, pp 46-52.

51 Deblits, C. (2011) 'Feedlots: A new tendency in global beef production?' Working paper 2/2011 (updated July 2012), Agri-Benchmark.

52 John H. Dyck and Kenneth E. Nelson, Structure of the Global Markets for Meat**.** By Market and Trade Economics Division, Economic Research Service, U. S. Department of Agriculture, Agriculture Information Bulletin No. 785.

53 USDA GAIN (United States Department of Agriculture Global Agricultural Information Network), Russia Livestock and Products Annual 2012.

2.4.3 Selected soy and beef companies

The sector overview and analysis of the supply chain characteristics in the selected countries led to the identification of specific companies for further analysis. The list of soy companies has been combined with the list of beef companies as a result of the heavy use of soy as an input in beef production. An increase in the demand for meat (including beef) is having a direct effect on the demand for soy and the two supply chains are becoming ever-more dependent on each other. The companies that have been selected from the soy and beef supply chains for further analysis are listed in Table 12. Major relevant subsidiaries have also been listed.

Table 12
Soy and beef companies selected for further analysis

#	Company name	Notable subsidiaries	Public	SX
39	Aceitera General Deheze S.A.		No	
40	AG Processing, Inc.		No	
41	Algar		No	
42	Archer Daniels Midland Company (ADM)		Yes	New York
43	The Beidahuang Group		No	
		Jiusan Group	No	
		Heilongjiang Agriculture	Yes	Shanghai
44	Brasil Foods SA		Yes	Sao Paolo New York
45	Bunge, Ltd.		Yes	New York
		Bunge Argentina S.A.	No	
46	Caramaru Alimentos S.A.		No	
47	Cargill Incorporated		No	
48	China grain reserves corporation (Sinograin)		No	
49	Chinatex Corp.		No	
50	COFCO Corp.		No	
		China Agri-Industries, Ltd.	Yes	Hong Kong
51	E.I. DuPont de Nemours and Company		Yes	New York
		Pioneer Hi-Bred International, Inc.	No	
52	Grupo Andre Amaggi		No	
		Amaggi Exportação e Importação Ltda	No	
		Amaggi Europe BV	No	
		Amaggi Luxembourg SARL	No	
		Denofa AS	No	
53	Itochu Corp.		Yes	Tokyo
		Fuji Oil Co., Ltd.	No	
54	JBS SA		Yes	Sao Paolo
55	Louis Dreyfus Commodities B.V. Group		No	
56	Marfrig Global Foods S.A.			Sao Paolo
		Moy Park, Ltd.	No	
57	Marubeni		Yes	Tokyo
58	McDonald's Corporation		?	?
59	Minerva S.A.		Yes	Sao Paolo
60	Molinos Rio de la Plata S.A.		Yes	Buenos Aires
61	Monsanto		Yes	New York
		Monsanto Argentina S.A.I.C.	No	
		Monsanto Paraguay S.A	No	
		Alkagro do Brasil Ltda BO	No	
62	Nidera BV		No	
63	Noble Group		Yes	Singapore
64	Nutreco NV		Yes	Amsterdam
65	Smithfields Foods, Inc.		No	
66	Sumitomo Corp.		Yes	Tokyo
67	Syngenta AG		Yes	Zurich

#	Company name	Notable subsidiaries	Public	SX
				New York
68	Tyson Foods, Inc.		Yes	New York
69	Unilever Group		Yes	Amsterdam
70	Vicentin S.A.I.C.		No	
71	Wilmar International, Ltd.		Yes	Singapore
72	Zhongfang group		?	
		Zhangzhou Zhongfang Cereal & Oil	No	
		Zhongfang Cereal & Oil Imports and Exports	No	

2.4.4 Identified trends

2.4.4.1 Soy

Before discussing the trends in the soy sector it is important to mention that soy is a heavily traded commodity, with the world price determined on global commodity markets. Specific factors that affect the price on these markets and the effect of speculation on the price of soybeans and its derivatives based on these factors has not been considered in this analysis[54] as it was outside the scope of this research. Expanding the analysis to include the influence of the commodities markets on the soy supply chain and placing the company profiles in the context of this influence would be a valuable exercise and could potentially provide more insight into the business environment in which the selected companies operate.

Supply chain consolidation

The general trend in recent times has been one of consolidation with the soy supply chain being increasingly dominated by a handful of multinationals, some of which are displaying an increasing degree of vertical integration. Seed and agrochemical suppliers Monsanto, Du Pont and Syngenta are dominant with GM soybeans carrying Monsanto's Roundup Ready (RR) trait almost exclusively used in many places. Up to 77% of global soy production in 2009 was estimated to be from GM seed,[55] while in Paraguay up to 98% of the soybeans produced are believed to be RR.[26] Soybean production in Brazil, Argentina and Paraguay is increasingly taking place on industrial sized farms while four companies dominate the worldwide trade in and processing of soybeans, soybean meal and soybean oil. These companies (ADM, Bunge, Cargill and Louis Dreyfus) are often referred to as the ABCD companies and it is said that they account for between 75% and 90% of the global grain trade.[56] They own and operate a hard-to-duplicate infrastructure network of storage facilities, ports, ships and oilseed processing facilities in addition to having strategic alliances and joint ventures with the largest seed and agrochemical companies. Consolidation is also taking place further up the supply chain as meat companies, food service and consumer good companies and retailers grow in size and influence. US giant Wal-Mart for example is the world's largest retailer and reports annual sales of more than USD400bn. Carrefour and Tesco generate around EUR100bn in annual revenues while companies such as Casino, Unilever and Ahold are large companies with annual revenues in the range of EUR50bn. These companies all have (expanding) multi-sector interests and have an interest in and are dependent on the commodities markets. Some of the retailers, including Wal-Mart, its UK division Asda and Carrefour, have even moved into consumer banking while Tesco, the world's second biggest retailer, will add personal checking and bank accounts to its suit of financial service product offerings for its supermarket customers.[57]

[54] B. Thorn, 'Four factors affecting commodity prices', (11 April 2014) http://nrn.com/commodities/4-factors-affecting-commodity-prices (15 July 2014).

[55] WWF. (2014) The Growth of Soy: Impacts and Solutions, WWF International, Gland, Switzerland.

[56] Lawrence, F. The global food crisis: ABCD of foor - how the multinationals dominate food, the Guardian online, posted 2 June 2011. http://www.theguardian.com/global-development/poverty-matters/2011/jun/02/abcd-food-giants-dominate-trade

[57] M.Schuffham, 'Tesco takes on UK banks with current account launch', (10 June 2014). http://uk.reuters.com/article/2014/06/09/uk-tesco-bank-account-idUKKBN0EK24H20140609 (15 July 2014).

The production standards that these companies adopt and the demands that they place on their suppliers will have a significant effect on the future direction of the soy supply. Unilever, for example, released its Sustainable Agriculture Code (SAC) in 2010 wherein Unilever set itself the target of sourcing 100% of the raw materials it uses from farms that apply sustainable agricultural practices by 2020. In March 2014 it released the third version of the rules for its sustainable sourcing programme for agricultural raw materials. In the rules a range of certification schemes are listed with which suppliers need to be compliant. Soy sourced by Unilever for example needs to be certified as compliant with the Roundtable for Responsible Soy (RTRS) standard.[58] In addition to multiple standards for cattle and livestock Unilever has developed an implementation agenda for both 'sustainable livestock' and 'livestock transport & slaughter'.

Vertical integration
To access differentiated markets some companies are investing in securing control over their own supply chain, for example the Brazilian company Grupo Andre Maggi. The Maggi Group produces non-GM soybeans certified by Proterra and was the first company to have farms certified by RTRS in the Mato Grosso region of Brazil. In recent years, the company has acquired CERT-ID certification for particular parts of its operations and has continued to operate privatised ports, some specialised in handling non-GM soy. These ports give the company a direct shipping route to the EU where it operates crushing facilities. The vertically integrated supply chain allows the Maggi group to prevent contamination, reduce the cost of segregation and provide traceability services to its customers.

Chinese Strategic M&A
Increasing demand for from China has seen large companies servicing the Chinese market become more active in the soy supply chain. This has resulted in the ABCD companies facing increasing competition from large trading houses, companies and processors such as COFCO (China), Wilmar (Singapore), Marubeni (Japan) and Itochu (Japan). In attempts to the circumnavigate the infrastructure network of the ABCD companies these Chinese companies and those companies servicing the Chinese market have been acquiring foreign companies, taking stakes in foreign companies and/or entering into strategic alliances, partnerships and agreements with foreign companies in an attempt to secure their supply of soybeans and/or soybean meal. Acquisition activities have been directed at infrastructure along the entire supply chain, from production and processing to export. A prime example of this recent strategic behaviour by Chinese-facing companies is COFCO, China's largest grain trader and China's state-owned agri-food company. It made two large, strategic deals in early 2014 in order to gain better and more secure access to global oilseed and grain (including soybean) markets. The first deal, in February 2014, saw COFCO acquire a 51% stake in Nidera, a Dutch grain trader. The deal gave COFCO secure direct access to the Dutch firm's global grains business in over 20 countries including the key soybean export markets in Argentina and Brazil. Less than two months later, in April 2014, COFCO announced a second major overseas purchase, this time a controlling stake in the agricultural division of the Hong Kong based Noble Group, Ltd. The deal gives COFCO access to Noble's worldwide grain sourcing and trading business. Both deals were designed to allow COFCO to bring food supply into China without having to go through the ABCD[59] network and to allow it to control costs better.[60] COFCO's Chairman Frank Ning said in a statement that by pushing the international strategy, COFCO will be able to set up a stable grain corridor between the largest global grain-growing origins and the biggest global emerging market. In another example, Japan's Marubeni Corp. bought the US grain merchant Gavilon in 2013 for USD3.6bn, making it China's top grain supplier, although that title could be short-lived given the COFCO's recent shopping spree.[61] Chinese companies are also on the lookout for land and farms in foreign countries in order to grow more grain including soy. The Chinese state-owned giant Beidahuang Group's soy

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[58] Unilever sustainable sourcing programme for agricultural raw materials, version 3.0, March 2014. http://www.unilever.com/images/Scheme-Rules-v3.0-(Annex-update)-1%20August-2014_tcm13-338425.pdf
[59] ABCD network refers to the large commodity traders ADM, Bunge, Ltd., Cargill and Louis Dreyfus. See Section 2.4.2.
[60] N. Thukral, M. Flaherty, 'China's COFCO to pay $1.5 billion for stake in Nolbe's agribusiness', (2 April 2014). http://www.reuters.com/article/2014/04/02/us-noble-group-cofco-idUSBREA3103E20140402
[61] Ibid.

business, Jiusan Oil & Fat Co, reportedly targets farmland in Latin America, Australia, and South East Asia, to expand its agricultural business and secure access to food.[62]

Conclusion on trends
The soy supply chain is characterised by consolidation in a number of key segments, increasing vertical integration by large multinationals through M&A and the formation of strategic partnerships and increasing competition from companies that service the Chinese market.

2.4.4.2 Beef

Supply chain consolidation
The beef supply chain, in similar fashion to both pork and poultry is undergoing a period of consolidation that is taking place across borders. This consolidation appears to be the result of increasing returns to size[63] at several levels of the meat supply chain. A number of meat firms have become multinational producers, investing in animal production and/or processing in one or more foreign countries. Economic imperatives are the driving force behind the consolidation that is taking place. With tight profit margins companies are being forced to chase after economies of scale.[64] While economies of scale may mean more efficient production, it is also leading to the concentration of market power in the hands of an increasingly small group of companies. The Brazilian company JBS for example has become the world's largest producer of beef with the capacity to slaughter up to 85,000 head of cattle a day.[65] It is also the world's largest food processing company and in the late 2000s it acquired meat companies in the US, Australia and Europe as well as in Brazil.[66] In 2013 for example JBS acquired two business units from Marfrig for USD2.75bn in an attempt by Marfrig to cut its level of debt. JBS now has over 185,000 employees, revenue of more than USD38bn and a sales and distribution network that services over 150 countries. Another example is the recent acquisition by Brasil Foods SA of a 16.9% stake in Minerva in exchange for two slaughterhouses, a deal which allows both companies to reinforce their presence in the processing and food services segments respectively.[67]

Vertical integration
In addition to supply chain consolidation tight profit margins and economic incentives are leading to companies vertically integrating multiple segments of the supply chain into their operations. A growing share of farmers in Brazil, Argentina and Paraguay are working under contract for companies that have processing and distribution facilities, which includes large food/meat companies like JBS, Marfig and Minerva. This vertical integration allows companies to maintain control over their supply chain, guaranteeing quality and compliance with health and safety standards from production right through to the sale of their consumer facing brands by the retail sector.

Conclusion on trends
The beef supply chain, in similar fashion to the other supply chains discussed, is undergoing a period of consolidation and vertical integration. Large beef (and meat) multinationals are increasing in size and are vertically integrating their operations through acquisition and strategic partnerships, giving them control over multiple segments of the supply chain.

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62 C.Yap. Dow Jones Newswires, 'China Beidahuang planning large farmland buys overseas', (11 March 2011) http://farmlandgrab.org/post/view/18291 (11 July 2014).

63 Returns to size is an economic term that is applied if an increase in size of an enterprise results in lower costs and increased net returns (the difference between revenues and costs).

64 Maennel, A. 2014. Meat Atlas. Heinrich Böll Foundation and Friends of the Earth Europe. Available at http://www.foeeurope.org/sites/default/files/publications/foee_hbf_meataltas_jan2014.pdf

65 JBS corporate website, www.jbs.com.br.

66 Maennel, A. 2014. Meat Atlas. Heinrich Böll Foundation and Friends of the Earth Europe. Available at http://www.foeeurope.org/sites/default/files/publications/foee_hbf_meataltas_jan2014.pdf

67 Russell, Michelle. Brazil: Minerva swaps stake for two BRF beef operations', Just-food online, 4 November 2013, http://www.just-food.com/news/minerva-swaps-stake-for-two-brf-beef-operations_id124990.aspx

2.5 Food retail

2.5.1 Sector overview

The food retail sector is highly competitive with retailers constantly trying to anticipate and adapt to ever-changing consumer preferences and purchasing habits. According to the USDA, global food retail sales are around USD4 trillion annually, with supermarkets/hypermarkets accounting for the largest share of sales (see Table 13). As shown in Table 14 most of the leading global retailers are US and European firms with the top 15 global supermarket companies accounting for approximately 30% of total sales.[68]

Table 13

Percentage share of global packaged food sales, by type of retail outlet,[69] 2003-07

Type of retail outlet	2003	2004	2005	2006	2007
Supermarkets/hypermarkets	51.8	52.1	51.8	51.6	51.5
Independent food stores	16.3	16.0	16.2	16.4	16.6
Convenience stores	6.9	7.0	7.0	7.1	7.2
Standard convenience stores	4.9	5.0	5.0	5.0	5.1
Petrol/gas/service stations	2.0	2.0	2.0	2.1	2.1
Discounters	8.0	8.2	8.4	8.5	8.6
Other	16.8	16.5	16.3	16.1	15.8
Total	**100**	**100**	**100**	**100**	**100**

Source: USDA.

Table 14

Leading retailers in global food sales, by type of retail outlet, in 2008

Rank	Supermarkets	Hypermarkets	Discounters	Convenience stores
1	Kroger (US)	Wal-Mart (US)	Aldi (GER)	Seven & I Holdings (US)
2	Safeway (US)	Carrefour (FR)	Schwarz Group (GER)	Itochu Group(JAPAN)
3	Tesco (UK)	Tesco (UK)	Rewe (GER)	Lawson (JAPAN)
4	Ahold (NL)	Auchan (FR)	Supervalu (US)	Spar (NL)
5	Edeka (GER)	E Leclerc (FR)	Carrefour (FR)	Carrefour (FR)
6	Rewe (GER)	Sainsbury (UK)	Wal-Mart (US)	Uny (JAPAN)
7	Delhaize (BEL)	Casino (FR)	Tengelmann Group (GER)	Musgrave Group (IRE)
8	ITM Entreprises (FR)	Schwarz Group (GER)	George Weston (CAN)	CWS (UK)
9	Carrefour (FR)	Ahold (NL)	Dansk (DK)	FEMSA (MEX)
10	Woolworths (US)	Metro (GER)	X5 Retail Group (RUS)	Tesco (UK)
11	Supervalu (US)	Target (US)	Edeka (GER)	AEON (JAPAN)
12	Publix (US)	Meijer Inc. (JAP)	Reitan-Gruppen (NOR)	Couche-Tard (CAN)
13	Spar (NL)	Shinsegae (S. Korea)	Norma (GER)	Auchan (FR)
14	Mercadona (ESP)	Systeme U (FR)	Tander ZAO (RUS)	CBA (HUN)
15	Casino (FR)	Louis Delhaize (BEL)	Jerónimo Martins (POR)	Casino (FR)
% sales top 15	**30.6%**	**73.5%**	**68.8%**	**57.5%**

Source: USDA, Euromonitor 2008.

The food retail sector spans across the supply chains of the four commodities that are the focus of this study. Food retailers are not only active in multiple supply chains but are also active in multiple markets. This section therefore complements the analysis of the supply chains of the four selected

68 http://www.ers.usda.gov/topics/international-markets-trade/global-food-markets/global-food-industry.aspx

69 According to Euromonitor, supermarkets are stores with a selling area of between 400 and 2,500 square meters, selling at least 70% foodstuffs and everyday commodities; hypermarkets are stores with a sales area of over 2,500 square meters, with at least 35% of selling space devoted to foods; discounters are stores that are typically 300-900 square meters and stock less than 1,000 product lines, largely packaged groceries; and convenience stores are shops selling a wide range of goods with extended opening hours.

commodities discussed in Sections 2.2, 2.3 and 2.4. In this section particular attention will be paid to the food retail sectors in the US, the EU and China. An overview of the food retail landscape in each of these three markets is provided below.

The United States (US)

In 2013 total at-home food sales in the US were around USD870bn with sales increasing year-on-year (see Table 15).

Table 15

Total at-home food sales (USDm), 2008-2013

Year	Total sales
2008	758,570
2009	755,737
2010	776,084
2011	817,228
2012	845,646
2013	870,994

Source: USDA.

As Table 16 shows, supermarkets are responsible for the majority of sales, followed by warehouse clubs and supercentres. The share of warehouse clubs and supercentres has increased over the last 15 years from 1.4% in 1990 to 16.3% in 2013, while that of supermarkets increased from 63.4% in 1990 to a high of 70.9% in 2000 before falling back down to 63.3% over the last decade.

Table 16

Percentage of at-home food sales by type of retail outlet, 2008-2013

Year	Super-markets	Convenience stores	Other grocery	Specialty food stores	Warehouse clubs and supercenters	Mass merchan-disers	Other stores	Home delivered, mail order	Farmers, processor, wholesalers, and other
1990	63.4	2.7	13.7	2.5	1.4	1.0	7.7	1.3	6.1
1995	75.4	2.7	1.5	2.2	3.2	1.5	5.1	1.8	6.5
2000	70.9	2.5	1.4	2.0	7.2	1.7	4.9	3.4	6.0
2005	65.8	2.6	0.7	2.3	14.1	1.0	4.9	2.8	5.8
2010	64.4	2.5	0.9	2.3	16.1	0.6	4.8	2.5	5.9
2011	64.1	2.5	1.2	2.3	16.1	0.6	4.9	2.5	5.9
2012	63.8	2.5	1.5	2.4	15.5	0.6	5.0	3.0	5.9
2013	63.3	2.7	1.1	2.6	16.3	0.5	4.8	2.9	5.9

Percentages may not add up to 100 due to rounding

Source: USDA.

The increase in the popularity of warehouse clubs and supercentres during the 1990s coincided with a period of growth and consolidation among US food retailers. As shown in Table 17 the share of total sales of the largest 4, 8, and 20 food retailers all substantially increased between 1995 and 2013. The share of total sales of the 20 largest retailers increased from 40.6% to 63.8% while the share of total shares of the top 8 and top 4 retailers increased from 27.3% to 48.1% and from 17.1% to 36.4% respectively. From these figures it is evident that the US food retail sector is dominated by a very small number of companies with the largest 4 retailers not only accounting for 36.4% of total sales.

Table 17

Top 4, 8, and 20 firms' percentage share of US grocery store sales, 1992-2013[70]

Year	Top 4	Top 8	Top 20
1995	17.1	27.3	40.6
2000	28.8	42.6	54.7
2005	35.5	49.0	61.6
2010	36.7	49.5	62.9
2013	36.4	48.1	63.8

Source: USDA, ERS calculations using data from US Census Bureau, Monthly Retail Trade Survey, company annual reports, and industry sources. Sales based on North American Industry Classification System (NAICS).

The four companies that dominate the US food retail sector are Wal-Mart, Kroger, Safeway and Publix. According to Forbes Magazine in 2013 Wal-Mart was the largest US company in terms of revenue, with net sales of USD473.1bn[71] including food and non-food grocery sales of USD117.4bn.[72] It is by far the largest US food retailer with a market share of 25%. Kroger, the second largest US food retailer has a market share of just with 2013 sales of USD76.7bn.[73]

European Union (EU)

The EU, consisting of 28 member states, has a combined population of over 500m, the world's third largest population after China and India (see Table 18).

As a result of the financial crisis spending on food in the EU remained constant or fell both at the member state level and on a per capita basis between 2000 and 2012.[74] Surprisingly European food retail companies pursued a strategy of expansion during this period. They opened new stores and added significant sales capacity across all types of retail outlets.[75] While food retail sales increased by 16% between 2000 and 2012 (mainly due to an increase in sales of non-food items) sales capacity grew by 40%.[76] The combination of this expansion strategy and a fall in per-capita consumer spending saw productivity (measured by sales value per square meter) in the EU fall by 13.9% between 2000 and 2012.[77]

Table 18

Population per EU member state

Country	Total population	Population %
Germany	80,767,463	15.93
France	65,835,579	12.98
United Kingdom	64,308,261	12.68
Italy	60,782,668	11.99
Spain	46,512,199	9.17
Poland	38,017,856	7.49
Romania	19,947,311	3.93
Netherlands	16,829,289	3.31
Belgium	11,203,992	2.21
Greece	10,992,589	2.16
Czech Republic	10,512,419	2.07
Portugal	10,427,301	2.05

70 Adjusted sales from Target and WalMart are added to grocery sales from the Census Bureau because these stores are not classified as supermarkets by the North American Industry Classification System (NAICS). Therefore, grocery sales reported by the Census Bureau are smaller than total sales used to estimate the reported concentration ratios.

71 http://fortune.com/fortune500/

72 http://www.ers.usda.gov/topics/food-markets-prices/retailing-wholesaling/retail-trends.aspx

73 http://www.euromonitor.com/grocery-retailers-in-the-us/report

74 http://www.strategyand.pwc.com/global/home/what-we-think/reports-white-papers/article-display/european-grocery-retail-2020

75 Sales capacity of hypermarkets, supermarkets and discount stores increased by 38%, 18% and 72% respectivelywith the largest increase being that of convenience stores with capacity increasing by a whopping 193%.

76 http://www.strategyand.pwc.com/global/home/what-we-think/reports-white-papers/article-display/european-grocery-retail-2020

77 The largest reductions occurred in the U.K. (32.7%) and France (25.3%).

Country	Total population	Population %
Hungary	9,877,365	1.94
Sweden	9,644,864	1.90
Austria	8,506,889	1.67
Bulgaria	7,245,677	1.42
Denmark	5,627,235	1.11
Finland	5,451,270	1.07
Slovakia	5,415,949	1.06
Ireland	4,605,501	0.90
Croatia	4,246,809	0.83
Lithuania	2,943,472	0.58
Slovenia	2,061,085	0.40
Latvia	2,001,468	0.39
Estonia	1,315,819	0.25
Cyprus	858,000	0.16
Luxembourg	549,680	0.10
Malta	425,384	0.08
Total population	506,913,394	100

Source: European Union.[78]

Economic recovery from the financial crisis has not been universal or equal across EU member states and there are large intra-EU differences in consumer preferences. Although the EU is considered a single market Planet Retail, a global retail analyst, identifies 15 groups and 67 types of consumers within the EU, pointing out that the retail landscape in different member states can have very different characteristics. Hypermarkets for example dominate the market in France with a market share of 32.1% while they only account for 9.1% of the market in Germany.[79] In spite of this segmentation at the member-state level Figure 7 lists the EU's ten largest retailers in terms of total sales.

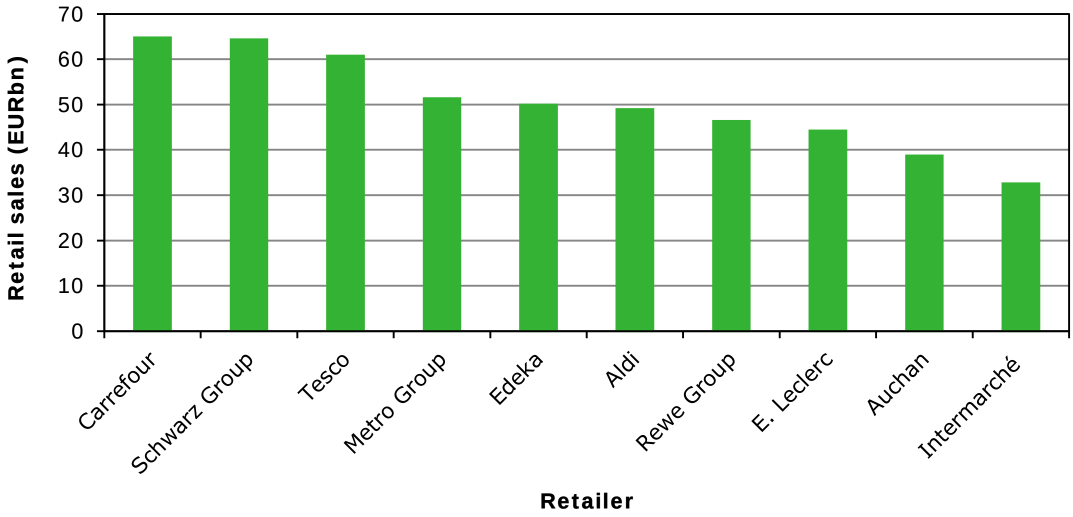

Figure 7 *Top 10 European food retailers, by total sales (EURbn)*[80]

The internal segmentation of the EU food retail sector makes it difficult to consider the EU food retail sector as a single sector for analysis. While providing detailed information on the food retail sector of all 28 member states is not the aim of this report additional information is provided on the food retail sectors of the three largest member states (UK, France and Germany) along with the Netherlands and Belgium. This is intended to not only give an indication to what extent the food retail sectors of the EU member states can differ from each other, but also to ensure that the most relevant EU food retail

[78] http://europa.eu/about-eu/facts-figures/living/index_en.htm
[79] http://www.planetretail.net/presentations/ApexBrasilPresentation.pdf
[80] http://www.planetretail.net/presentations/ApexBrasilPresentation.pdf

companies have been selected for further analysis (see Section 2.5.2 for further explanation of the selection process).

Although the EU is considered a single market the food retail sectors of the various member states remain segmented. While there are exceptions market consolidation has largely occurred at the member-state level. This is the result of large cultural differences between the different member states and the different contexts in which retailers must operate. This makes it difficult to consider the food retail sector as a single sector for analysis. While providing detailed information on the food retail sector of all 28 member states is not the aim of this report additional information is provided on the food retail sectors of the three largest member states (UK, France and Germany) along with the Netherlands and Belgium. This is intended to not only give an indication of how the food retail sectors of the largest member states differ from each other, but also to ensure that the most relevant European food retail companies have been selected for further analysis.

The United Kingdom (UK)

The UK's food retail sector is considered to be one of the most competitive food retail markets in the world. However, falling demand and overcapacity are threatening the 'big players' profitability.[81] As shown in Table 19 around three-quarters of the UK market is controlled by four major players; namely Tesco, Asda, Sainsbury's and Morrisons. In 2014 their recorded revenues were GBP63.5bn, GBP23.9bn, GBP22.9bn and GBP17.7bn respectively.[82]

Table 19

Market share of UK retailers, as of 1 March 2015

Retailer	Percentage market share
Tesco	28.7
Asda	17.0
Sainsbury's	16.8
Morrisons	11.0
The Co-Operative	5.9
Waitrose	5.2
Aldi	5.0
Lidl	3.5
Iceland	2.2
Symbols & Independent	2.0
Other Outlets	2.8

Source: Kantar World Panel[83]

In recent times these traditional 'big 4' retailers have been drawn into a price-war with the large German discounters Aldi and Lidl.[84] According to Kantar World panel the combined market share of these two discounters has increased from 5.1% at the beginning of 2012 to 8.5% at the beginning of 2015. This increase has largely been due to a change in customer preferences. Consumers facing a drop in real wages have opted to save money by shopping at the German discounters. Credit ratings agency Moody's said in a recent report[85] that Britain's 'big 4' supermarkets will be forced to cut prices further in the short-term in what is developing into a race to the bottom. Moody's predict that Aldi and Lidl are now entrenched in the UK market suggesting that their combined market share could reach 10% over the next couple of years and eventually grow to around 12-15%, a level similar to that of

81 http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/the-future-of-the-grocery-sector-in-the-uk.aspx

82 Individual company websites.

83 http://www.kantarworldpanel.com/en/grocery-market-share/great-britain/snapshot/01.03.15/

84 http://www.ft.com/intl/cms/s/0/be5e8d52-7ec6-11e4-b83e-00144feabdc0.html#axzz3WH8gKcA0

85 https://www.moodys.com/research/Moodys-Big-Four-UK-grocery-retailers-profit-margins-to-shrink--PR_310719?WT.mc_id=AM~RmluYW56ZW4ubmV0X1JTQl9SYXRpbmdzX05ld3NfTm9fVHJhbnNsYXRpb25z~20141017_PR_310719

discounters in other European member-states. In an attempt to strengthen their market position in the UK Aldi and Lidl are offering a wider range of products, including a premium range, and have increased the proportion of their products that are sourced locally in the UK.[86]

There is no doubt that the discounters have eroded the edges of the big four's market share and continue to do so. However, in a press release dated 19 June 2014, KPMG and the Ipsos Retail Think Tank (RTT) questioned how significant their effect has really been:

> 'despite recessionary-induced changes in shopping behaviour, the RTT believes it is difficult to see the big four's hold on the main grocery market being seriously challenged, simply because of their commanding (75%+) store network market penetration - a market share which has existed for almost ten years'[87]

KPMG/RTT warns that a price war could damage the sector's future prospects for attracting investment. They quote Nick Bubb, Retail Consultant to Zeus Capital as saying that,

> 'the big UK supermarkets have been dismal investments on the stock market for some time now and share prices remain under pressure, despite the attractive dividend yields now available on Tesco, Morrisons and Sainsbury's. Equity investors are clearly worried about the impact of declining industry sales volumes and declining gross margins on near-term profitability.'

They also quote Tim Denison, Director of Retail Intelligence at Ipsos as saying that

> 'the immediate threat to three of the big four is their potential inability to invest in the changes needed to move with the marketplace. With profit levels falling, the declared price cutting schemes and low volume sales, these grocers are becoming less attractive to investors.'

In June 2014 Moodys cut Tesco's rating to two notches above 'junk' status saying that further price cuts could put even more pressure on the leading retailers' future credit rating.[88]

Germany

20 years ago leading German food retailers were being confronted with discounters growing strongly at the expense of the well-established or traditional chains. This was a situation similar to the situation that can now being seen in the UK. The traditional German retailers had limited success in fending off the competition with discounters such as Aldi and Lidl amassing a combined market share of 32% (see Table 20).

Table 20

Market share by retail outlet type, in 2002

Retail outlet type	Percentage market share
Discount stores	32.2
Supermarkets and neighbourhood stores	27.8
Superstores	12.6
Hypermarkets	9.1
Cash and carries and wholesale clubs	6.5
Convenience and Forecourt stores	1.5

Source: Planet Retail.

86 http://www.theguardian.com/business/2014/oct/17/moodys-report-makes-grim-reading-for-big-four-supermarkets
87 http://www.kpmg.com/uk/en/issuesandinsights/articlespublications/newsreleases/pages/the-future-of-the-grocery-sector-in-the-uk.aspx
88 http://www.theguardian.com/business/2014/jun/16/moodys-tesco-supermarkets-credit-rating

The more established German supermarkets, such as Edeka and Rewe, ultimately chose a different approach to their UK counterparts. Instead of competing on price they decided to compete on quality. While this may have impacted upon their market share this strategy has resulted in Edeka and Rewe, the largest traditional retailers, being able to retain their position as the largest German retailers by total sales. In 2013 Edeka had sales of EUR50.2bn followed by Rewe with sales of EUR36.9bn and Lidl with sales of EUR34.1bn. In terms of market share Edeka had a market share of 25.7% followed by Lidl (18.5%) and Rewe (16.0%).[89]

France

In 2012 the French food retail market was worth around EUR221bn. Like most other EU food retail markets, the French food retail market is dominated by a small number of large firms. As Table 21 shows 56% of the market is controlled by the 3 leading retailers. In 2013 Carrefour was the largest with a market share of 21.7% and total sales of EUR45bn. E. Leclerc was the second largest with a market share of 20.1% and total sales of EUR42bn while Intermaché was third with a market share of 14.1% and total sales of EUR31bn.[90]

Table 21

Market share of French retailers, as of 1 March 2015

Retailer	Percentage market share
Carrefour	21.7
E. Leclerc	20.1
Intermarché	14.1
Auchan	11.6
Casino	11.3
Systéme U	10.2
Lidl	4.8
Delhaize	3.4
Aldi	2.3
Autres	0.4

Source: Kantar World Panel.[91]

In 2013 Hypermarkets accounted for 42% of French grocery sales although their popularity has been decreasing since 2008. This shift has coincided with a rise in the popularity of discounters, specifically Aldi and Lidl, in a situation similar to the one in both the UK and Germany. While the French food retail sector is competitive, it is not the same as in the UK, mainly a result of French sector being more heavily regulated by the French Government. As quoted in an article by the Guardian newspaper,

> ‘strict laws on the price of branded goods mean they should not be significantly cheaper in one store than in others as this would constitute ‘unfair competition’. Laws also regulate opening hours and ban selling at a loss. Shops are not allowed to open on Sundays, or very late at night, except in designated tourist areas. Small family-owned and run ‘corner’ shops are exempt from the regulations’.[92]

The Netherlands

There are around 4,300 supermarkets in the Netherlands with total sales in 2014 of EUR34.2bn, an increase of 1.5% compared to 2013.[93] In 2014 the largest 4 largest food retailers in the Netherlands were Albert Heijn, the Jumbo Groep (C1000, Jumbo and Super de Boer), Lidl and Aldi (see Table 22).

89 http://www.planetretail.net/presentations/ApexBrasilPresentation.pdf
90 http://www.planetretail.net/presentations/ApexBrasilPresentation.pdf
91 http://www.kantarworldpanel.com/en/grocery-market-share/great-britain/snapshot/01.03.15/
92 http://www.theguardian.com/business/2014/oct/05/supermarkets-discounters-europe-us-china-japan
93 http://www.cbl.nl/de-supermarktbranche/feiten-en-cijfers/

Combined they have a market share of 71% with Albert Heijn being by the largest with a market share of around 33%. Superunie with a market share of almost 30% is not considered in terms of the largest retailers as it is a purchasing organisation that represents the interests of 13 independent retail organisations.

Table 22
Market share of Dutch retailers during the period 2009-2014

Retailer	2013	2014
Albert Heijn	34.0	34.1
Jumbo Groep	20.7	19.8
Jumbo	11.2	14.0
C1000	9.5	5.8
Super de Boer	-	-
Superunie incl. DC*	28.8	29.0
Plus	5.8	5.9
Spar Holding	1.8	1.7
Spar formule	1.3	1.3
Spar other	0.5	0.5
Coop	2.8	2.9
Deen	2.0	2.1
Hoogvliet	2.1	2.1
EMTE	2.7	2.7
Jan Linders	1.0	1.0
Poiesz	1.0	1.0
Vomar	1.6	C
MCD	0.6	0.6
Detailresult	5.6	5.7
Detailconsult	3.7	3.8
Dekamarkt	1.9	1.9
Sanders	-	-
SU other	2.8	C
Aldi	7.4	7.4
Lidl	9.0	9.7
Other	0.1	-
Food Total	100.0	100.0

Source: Nielsen; C = details not available.

According to CBL, the organisation responsible for representing the interests of the Dutch supermarket sector, consumers' preferences have been affected by the economic crisis. 58% of consumers are paying more attention to price while 44% of consumers are purchasing private labels more often.[94] Euromonitor International suggests that Dutch retailers can be split into two groups based on performance. Supermarkets, hypermarkets, convenience stores, and in particular discounters have experienced positive growth while smaller shops and traditional food retailers have experienced no or negative growth.[95] This has been the result of Dutch consumers looking for cheaper prices and choosing to shop at retailers that offer larger product ranges.

Belgium

In 2014 Belgian's food retailers registered just a 1% increase in current value. Although sales volume increased pressure on prices limited the growth in total sales value. According to Euromonitor International this was due to the increasing popularity of discounters, and to the expansion of Ahold's Albert Heijn into Belgium.[96] Supermarkets account for around 55% of the Belgian food retail market[97] while the three leading retailers - Colruyt, Delhaize and Carrefour - have a combined market share of

[94] Data quoted by CBL are published in 'Consumenten Trends 2014'.
[95] http://www.euromonitor.com/grocery-retailers-in-the-netherlands/report
[96] http://www.euromonitor.com/grocery-retailers-in-belgium/report
[97] http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Retail%20Foods_The%20Hague_Netherlands_6-25-2012.pdf

72% (see Table 23). Belgians still prefer larger supermarkets and superstores but are increasingly appreciative of having smaller convenience stores close to their homes.[98]

Table 23

Market share of Belgian retailers in 2012

Retailer	2012
Colruyt	27.1
Delhaize	22.8
Carrefour	22.2
Aldi	11.1
Louis Delhaize	5.4
Lidl	4.6
Makro	4.5
Other	2.3
Total	100.0

Source: StoreCheck FoodGids 2012, FEVIA.

China

In 2011 China's food retail sector became the world's largest with total sales of over USD970bn.[99] While the Chinese market is technically a single market, many factors including geography, infrastructure and culture lead to the Chinese food retail market being highly segmented. This and a high degree of competition is reflected in the fact that the top 10 food retailers have a combined market share of less than 50% (see Table 24).

Table 24

Market share of Chinese retailers, as of 1 March 2015

Retailer	Percentage market share
Sun Art	9.1
Vanguard (+Tesco)	8.0
Wal-Mart	5.9
Carrefour	4.5
Lian Hua	3.7
Yonghui	2.8
Wu-Mart	2.1
WSL	1.9
Spar	1.5
Lotus	1.3

Source: Kantar World Panel.[100]

Since joining the WTO in 2004 the Chinese government has gradually lifted some of the restrictions that prevented international retailers from entering the Chinese market. The greater liberalisation has enabled foreign retailers to pursue their expansion goals in China more freely. At the same time the Chinese government has stopped supporting what were effectively (partly) state-owned retailers. This has forced local retailers to become more innovative which has increased the competition between foreign and domestic retailers even further.[101]

98 http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Retail%20Foods_The%20Hague_Netherlands_6-25-2012.pdf
99 http://www.cnbc.com/id/
100 http://www.kantarworldpanel.com/en/grocery-market-share/great-britain/snapshot/01.03.15/
101 Hingley, M., Lindgreen, A. & Chen, L. 2009, 'Development of the grocery retail market in China', British Food Journal, Vol. 111, Iss. 1, pp. 44-55.

International retailers have also found the Chinese market to be a difficult one to penetrate. A lack of knowledge about local consumers and neglect of food safety issues are given as key reasons for their underperformance.[102] This combined with the general challenges facing food retailers in China (e.g. increasing operating costs) has made it difficult for the likes of Wal-Mart, Carrefour and Tesco. In 2013 for example these three retailers reportedly reduced their store openings by 27%.[103]

Some well-placed domestic food retailers have seized upon the difficulties of the foreign retailers by optimising product offerings and pricing, while enhancing their customers' shopping experience.[104] Underperforming international food retailers have recently provided domestic retailers, who have been looking to expand their market share, with attractive M&A opportunities. Some domestic retailers have taken over the Chinese operation of their international counterparts, while some international food retailers have actively sought out cooperation with domestic retailers. One example of such cooperation is the joint venture between Tesco and China Resources Enterprise (CRE), started in 2013. Tesco has a 20% stake and China Resources Enterprise an 80% stake in the venture, with the deal completed in May 2014.[105] The deal saw Tesco combine its 131 Chinese outlets with CRE's almost 3,000 stores, operating under the Vanguard brand.[106]

The growth of the Chinese economy has increased the average wealth of Chinese consumers, who are now starting to demand more convenience and quality. Chinese consumers do remain relatively sensitive to changes in price though, a result of Chinese consumers spending 39% of their income on food, significantly more than those in other developed countries.[107]

2.5.2 Selected food retail companies

The majority of the food retail companies selected for further analysis were identified during the analysis of the supply chains of the four commodities that are the primary focus of this study. The analysis of the food retail sector in the selected markets ensured that all of the most relevant food retail companies had been included. Aldi and Lidl (a subsidiary of the Schwarz Group) for example were added to the list as a result of the analysis of the food retail sector in the EU. The food retail companies that were selected for further analysis are listed in Table 25. Major subsidiaries have also been listed.

Table 25

Retail supermarket companies selected for further analysis

#	Company name	No subsidiaries	Public	SX
73	Ahold		Yes	Amsterdam
74	Albertson's			
75	Aldi			
76	Carrefour		Yes	Paris
77	Casino Guichard-Perrachon S.A.		Yes	Paris
78	China Resources Enterprise		Yes	Hong Kong
79	Costco			
80	Delhaize America			
81	Kroger			
82	Marks & Spencer			
83	Metro			
84	Publix			
85	Safeway, Inc.		Yes	New York
86	Schwarz Group			

102 Lam, T., Li, C. & Gong, E. 2014, The changing face of China's retail market, Fung Bunsiness Intelligence Centre.
103 http://www.theguardian.com/business/2014/oct/05/supermarkets-discounters-europe-us-china-japan
104 Lam, T., Li, C. & Gong, E. 2014, The changing face of China's retail market, Fung Bunsiness Intelligence Centre.
105 Lam, T., Li, C. & Gong, E. 2014, The changing face of China's retail market, Fung Bunsiness Intelligence Centre.
106 http://www.bbc.com/news/business-27615404
107 Food Chain Centre, 2004, Changes in family type, available at www.foodchaincentre.com

#	Company name	No subsidiaries	Public	SX
		Lidl		
87	Supervalu, Inc.		Yes	New York
88	Target Corporation			
89	Tesco PLC		Yes	London
90	Wal-Mart Stores, Inc.		Yes	New York
		Asda Group, Ltd.	Yes	No
91	Wholefoods Market, Inc.			

2.5.3 Identified trends

Some of the identified trends are relevant for all three focus markets, while others apply to one or two specific markets. This is indicated in the text. The following trends have been identified for the food retail sector:

Consumers are increasingly shopping for food and beverages across multiple types of retail outlets
In both the US and the EU there has been a notable shift from the hypermarket or one-size-fits-all approach to a food retail landscape where the popularity of smaller types of retail outlets (e.g.: convenience and express stores) is increasing. The trend is driven by the fact that few stores offer the precise mix of value, quality, and private label brands that consumers are looking for.[108] In the US, shopping habits have been dominated by the 'superstore' however things are changing. Kroger for example, the US's largest supermarket chain, has now enjoyed 43 consecutive quarters of growth despite having no presence overseas. Their approach has led some retailers, such as Wal-Mart, to scale back their stores, expand their smaller-store formats and specifically target certain groups of customers.[109] [110] This trend is mirrored in various European markets such as France, Belgium and the UK where frequent trips to local retail outlets is becoming more popular. In China the development of convenience stores is gaining momentum. As small format retailers, convenience stores have the advantage of having closer access to their target consumers. They are able to offer faster services along with attractive product selections and added convenience[111], something that Chinese consumers are also increasingly demanding.

Established retailers are becoming more alike
Large retailers in the US and the EU are finding it more difficult to differentiate themselves from their traditional competitors. Up-market and discount chains are catering to specific types of consumers and seeing their market share increase as a result. In the US for example, this has been the result of high-income consumers being able to maintain their spending habits while others have been forced to reduce their spending.[112] The food retail sector in the US has reflected this increasing polarisation of consumer spending with both upscale (e.g. Whole Foods Market) and economy retailers (e.g. Costco) performing better than the sector average.[113] The Chinese food retail markets is less mature than the US and EU markets. As a result retailers still largely cater to specific groups of consumers. This may be the result of the large income gap in China, not only between rural and urban areas but also between those living in urban areas. Foreign retailers for example tend to target middle- to high-class consumers while domestic retailers mostly target low- to middle-class consumers.

Private labels are gaining popularity
Sales of private-label groceries are increasing across the EU[114] and the US, with total sales of private-label products in the US expected to grow from US$83 billion in 2008 to US$133 billion in 2016.

[108] http://www2.deloitte.com/us/en/pages/consumer-business/articles/2013-american-pantry-study-consumer-products.html
[109] http://www.theguardian.com/business/2014/oct/05/supermarkets-discounters-europe-us-china-japan
[110] http://www.businessinsider.com/walmart-is-building-smaller-stores-2012-10?IR=T
[111] Lam, T., Li, C. & Gong, E. 2014, The changing face of China's retail market, Fung Bunsiness Intelligence Centre
[112] http://www.euromonitor.com/grocery-retailers-in-the-us/report
[113] http://www.pwc.com/en_US/us/retail-consumer/publications/assets/pwc-retailing-2020.pdf
[114] The largest market shares are to be found in Western Europe, led by Spain (49%), the U.K. (47%) and Portugal (43%). Belgium and the Netherlands had a market share of 40% and 36%, respectively while market shares in the Nordic region and most of the Central and Eastern European countries are between 25% and 30%.

Private labels are not only about price though with more than 90% of consumers believing that "private-label solutions offer the same or better value versus their national brand counterparts, and more than 80% believe the quality is the same or better"[115]. Some retailers have developed two private labels, with one focused on price and the other focused on quality in order to cater to different consumer groups. While Chinese consumers are becoming increasingly aware of private label products, they are still in short supply compared to other more mature food retail markets such as the EU and the US[116]. Private label products are however expected to become more popular in China as the Chinese food retail market modernizes and matures.

Demand for online shopping services is increasing

Retailers in all three markets are increasingly going online in an attempt to provide a more tailored shopping experience for customers. Examples of online offerings include product recommendations, personal promotions and even recipe suggestions based on previous purchases. Retailers are also catering to the demand for online services by offering home-delivery services and pick-up points in an attempt to cater to a growing demand for convenience. Albert Heijn, the Netherlands largest retailer is a good example of this trend. The company has invested heavily in pick-up points for online shoppers and is continuing to invest in various online retailing initiatives such as personalised recipe pages, and promotions. In China Auchan launched a similar initiative in 2014. Called 'Auchan Drive' customers can purchase products online via Auchan's website and pick them up at a pickup point. Yonghui superstore has even moved into mobile commerce. Since early 2014 consumers are able to place orders and complete the payment process via their mobile device.[117] There are an increasing number of online-only food retailers. Feiniu is one such example. In 2013 RT-Mart leveraged its advantage in procurement and supply chain management by launching Feiniu, an online retailer offering more than 200,000 products and promising to deliver orders within 24 hours.[118]

There is rising consumer interest in knowing where food is produced

Consumer awareness is increasing in all three markets. In the EU and the US this has led to a sharp increase in the use of standards and/or labels that provide consumers with information on where and how a product has been produced. European retailers are particularly embracing standards in an attempt to cater to increased consumer demand for credibility. Food retailers in the EU are now increasingly emphasizing locally grown products, in-season products as well as products that are certified as being organic, natural or responsibly/sustainably produced (e.g. Fairtrade, Rainforest Alliance). Some European retailers are now requiring their suppliers to comply with specific standards for specific products (including for the four commodities that are the target of this report) while others have developed their own sourcing standards and policies. The Dutch retailer Albert Heijn for example has partnered with WWF in an attempt to encourage dairy, meat and eggs suppliers to use sustainable soy-based animal feed by the end of 2015. By this time Albert Heijn has also pledged to only sell sustainably caught MSC[119] certified fish or ASC[120] certified fish that has been sustainably farmed.[121] The US food retailer Kroger has also adopted a number of sustainability standards. On their website they have the stated goal of sourcing 100% of their top 20 wild-caught species from fisheries that are MSC certified by 2015. They are also working with the Global Aquaculture Alliance's Best Aquaculture Practices (BAP) programme to ensure that their farmed seafood items meet strict standards for sustainability.[122] Chinese consumers already have a preference for fresh produce but are showing a growing preference for imported processed products as a result of some recent food safety scares. Their confidence in locally produced products has decreased, especially given that food safety and food labelling regulations are not yet as detailed in China as they are in the EU and the US. Food retailers are also not yet as active in China as they are in the US and the EU in terms of standards and sourcing policies.

115 http://www.iriworldwide.com/Portals/0/T_T%20December%202013%20Private%20Label.pdf
116 http://www.sourcing.org.cn/en/Article_Show1.asp?ArticleID=6951
117 Lam, T., Li, C. & Gong, E. 2014, The changing face of China's retail market, Fung Bunsiness Intelligence Centre.
118 Lam, T., Li, C. & Gong, E. 2014, The changing face of China's retail market, Fung Bunsiness Intelligence Centre.
119 Marine Stewarship Council, see www.msc.org
120 Aquaculture Stewardship Council, see www.asc-aqua.org
121 https://www.ahold.com/Media/WNF-and-Albert-Heijn-collaborate-to-promote-conservation-and-sustainability.htm
122 http://sustainability.kroger.com/sustainability_sustainable_seafood/index.shtml

Non-traditional and traditional food retailers are competing with each other
Most of the growth in food sales of non-traditional stores is due to supercenters and warehouse stores although in the US, dollar stores (e.g. Dollar General and Family Dollar) and drugstores (e.g. Rite Aid, CVS, and Walgreens) have increased sales by expanding their retail food offerings.[123] Some traditional retailers in both the US and the EU (e.g. Safeway, Kroger in the US, and Carrefour in the EU) have added gasoline pumps in their parking lots and have started offering promotional tie-ins to grocery purchases in an attempt to increase sales. Others have added in-store café's and seating areas to challenge other food outlets for business. This is not yet the case in China however it may be a strategy that retailers employ as China and the Chinese food retail market develop further.

Conclusion on trends
The food retail sector in all three of the markets studied is highly competitive with retailers constantly having to anticipate and adapt to changing consumer preferences. The US and EU food retail markets are highly consolidated with a small number of retailers dominating. In the EU consolidation occurs at the member-state level with only a small number of retailers heavily present in multiple member states. The Chinese market, while competitive has a low level of consolidation with the top 10 retailers having a combined market share of less than 50%. The Chinese market is also segmented with segmentation occurring as a result of geography, infrastructure and/or culture.

While each retail market has its own characteristics the food retail sector across all three markets is generally characterised by changing consumer lifestyles, leading to an increased demand for convenience, and increasing consumer awareness, which is leading to increased consumer demand for credibility and assurances on product quality. As a result food retailers, particularly in the US and the EU, where they are supported by stronger government standards on food safety and food labelling, have developed various requirements and set a range of targets for the sustainable sourcing of tuna, shrimp, beef and soy. Chinese retailers are expected to follow suit as the Chinese market modernizes and matures.

2.6 Companies active in various segments of a supply chain or multiple supply chains

Each of the companies that have been identified as being significantly active in more than one segment of a supply chain or multiple supply chains are listed in Tables 14 and 15. In both tables the involvement of each company in the different segments of the three supply chains is included. The selected food retail companies are considered only as retail companies and have therefore not been included in this analysis.

2.6.1 Skipjack canned tuna and cultured shrimp

Skipjack canned tuna and cultured shrimp are completely different sectors. Therefore, as can be seen in Table 26, there are only a few companies that are involved in both supply chains. These companies are all large seafood with several subsidiaries and activities in the seafood sector. Two of the identified companies are active in both the canned tuna and the soy supply chain. These companies are large Japanese trading conglomerates that besides canned tuna and soy are involved in a wide range of other products and activities.

Table 26
Overview of companies active in multiple segments for canned tuna and cultured shrimp

[123] http://www.ers.usda.gov/topics/food-markets-prices/retailing-wholesaling/retail-trends.aspx

Company name	Canned tuna	Cultured shrimp	Soy	Beef
Albacora S.A	Fishing Processing Exports			
Alliance Select Foods International, Inc.	Processing Exports			
The Bolton Group	Imports Processing Exports			
Bumble Bee Foods LLC	Imports Processing			
Century Canning Corp.	Processing Exports			
Charoen Pokphand Foods PCL		Hatcheries Feed Farming Processing Exports		
Devi Seafoods		Farming Processing Exports		
Dongwon Industries Co. Ltd.	Fishing Imports Processing			
F.C.F. Fishery Co. Ltd.	Fishing Trading			
Frinsa del Noroeste S.A.	Processing Exports			
Grupo Conservas Garavilla Sociedad Limitada	Fishing Processing Exports			
Hagoromo Foods Corp.	Imports Processing Exports			
Itochu Corp.	Trading Processing Exports		Crushing Trade	
Japfa Comfeed Indonesia Tbk PT		Hatcheries Feed Farming Processing		
Jealsa Rianxeira S.A.	Fishing Imports Processing Exports			
Kyokuyo Co. Ltd.	Fishing Trading			
Luis Calvo Sanz S.A.	Fishing Processing Exports			
Marubeni		Trade	Crushing Trade	
Maruha Nichiro Corp.	Imports Processing Exports	Farming Processing Exports		
Minh Phu Seafood Corp.		Input supplies processing Exports		
Mitsubishi Corp.	Imports Processing Exports	Imports Processing Exports		
Nippon Suisan Kaisha Ltd. (Nissui)		Farming Imports Processing Exports		

Nutreco NV		Feed
Pacific Andes International Holdings Ltd.		Imports Processing Exports
Parlevliet & Van der Plas		Imports Processing
Pescanova S.A.		Farming Imports Processing Exports
PT Central Proteinaprima Tbk. (CP Prima)		Feed Input supplies Farming Processing Exports
PT Sekar Bumi Tbk		Input supplies Farming Processing Exports
PTN Group		Processing Exports
PT Sekar Bumi Tbk		Input supplies Farming Processing Exports
RD Corporation	Fishing Processing Exports	
Surapon Foods PCL		Farming Processing Exports
Thai Union Frozen Products PCL	Imports Processing Exports	Hatcheries Feed Farming Processing Exports
Thunnus Overseas Group (TOG)	Processing Exports	
Tri Marine Holdings Cooperatief U.A.	Fishing Trading	

Thirteen out of the twenty selected companies in the canned tuna sector are active in different segments of the supply chain. Most of the large Asian companies have their focus on both the fishing and trading of raw material for canned tuna, or are more involved in the import, processing and export of canned tuna. Except for Frinsa Del Noroeste S.A., all Spanish companies are integrated and involved in fishing, processing and exporting activities. Several companies that are not active in multiple segments of the supply chain however have links with other companies that have been identified in this study. These companies can be seen as indirectly involved in multiple segments. Hagoromo Foods Corporation for instance holds shares in large companies that supply raw material such as Itochu Corporation and Thai Union Frozen Products. Bolton Group has a stake in the Spanish Luis Calvo Sanz S.A. (Grupo Calvo) to secure supplies.

Fifteen out of the eighteen companies that are identified as active in the cultured shrimp sector are involved in multiple segments. Some companies are fully integrated and have their own hatcheries and feed mills, while the also market their cultured shrimp. Other companies are involved in most of the parts of the supply chain. Except for some large feed producing companies there are no companies in the cultured shrimp sector selected in this study that have specialised in a certain aspect (e.g. farming, processing and exporting).

2.6.2 Soy and beef

As mentioned earlier the soy and beef supply chains are inextricably linked. This is because soybean meal is a primary ingredient in the compound animal feed used in meat production (including beef). Companies that are involved in the production and trading of soybean meal have a direct relationship with animal feed companies and the meat companies. Meat companies either manufacture their own feed or purchase their feed directly from feed companies. This strong linkage was the main reason for combining the soy and beef supply chains in this study.

As can be seen in Table 27, the majority of the soy companies selected for this study are active in the crushing and trading segments of the soy supply chain. Some companies are involved in additional supply chain segments such as secondary processing and animal feed production. However, the crushing and trading of soybeans is, in most cases, their core business.

Table 27

Overview of companies active in multiple segments for soy and beef

Company name	Canned tuna	Cultured shrimp	Soy	Beef
Aceitera General Deheze S.A.			Crushing Trade	
AG Processing, Inc.			Production Trade	
Algar			Crushing Trade	
Archer Daniels Midlands			Crushing Trade	Feed
Beidahuang Group			Crushing Trade	
Brasil Foods SA			Feed	Production Primary processing Secondary processing Consumer facing brands
Bunge, Ltd.			Crushing Trade	
Caramaru Alimentos S.A.			Crushing Trade	
Cargill Incorp.			Crushing Trade	Feed
China grain reserves corporation (Sinograin)			Trade	
Chinatex Corp.			Crushing Trade	
COFCO Corp.			Crushing Trade Feed	
E.I. DuPont de Nemours and Company			Seed Agro-chemicals	
Grupo Andre Amaggi			Production Crushing Trade	
Itochu Corp.	Trading Processing Exports		Crushing Trade	
JBS SA			Feed	Production Primary Processing Secondary processing Consumer facing brands

Company name	Canned tuna	Cultured shrimp	Soy	Beef
Louis Dreyfus Commodities			Crushing Trade	
Marfrig Global Foods S.A.			Feed	Production Processing Export
Marubeni		Trade	Crushing Trade	
McDonald’s Corporation				Consumer facing brand
Molinos Rio de la Plata S.A.			Crushing Secondary processing Trade	
Monsanto			Seed Agro-chemicals	
Nidera BV			Crushing Trade	
Noble Group			Crushing Trade	
Nutreco NV	Feed	Feed	Feed	Feed
Smithfields Foods, Inc.			Feed	
Sumitomo Corp.			Crushing Trade	
Tyson Foods, Inc.			Feed Meat production	Feed Primary processing Secondary processing Consumer facing brands
Unilever Group			Secondary processing	Secondary processing
Vicentin S.A.I.C.			Crushing Trade	Primary processing
Wilmar International, Ltd.			Crushing Trade	
The Zhongfang group			Crushing Trade	

Companies active in the beef supply chain are in most cases large multinationals active in multiple segments including production, (primary and secondary) processing and to some degree retail through their ownership of consumer facing brands. A number of companies, including JBS, Brasil Foods and Marfrig are also involved in soybean production and the production of animal feed for which they must purchase large quantities of soybean meal.

3 Financial composition of supply chain

3.1 Introduction

This chapter analyses how the three supply chains and the retail sector are financed, and who the largest financiers are.

This chapter starts by discussing a number of observations regarding the financial trends and developments that are relevant for each of the supply chains. These observations relate to both general developments in corporate finance as well as sector-specific trends. Next, this chapter analyses the individual companies included in this study. Companies in each of the supply chains are grouped into different clusters. For each of these clusters a company that typifies or demonstrates a particular financial or corporate structure is discussed as an example. Finally, the most important financiers of each of the supply chains are analysed based on aggregated data for each supply chain. This final section includes an analysis of financial institutions involved in multiple supply chains.

Throughout this chapter, text boxes are included that discuss the implications of the various forms of ownership and capital structure on the influence of investors and a company’s openness for shareholder engagement. These text boxes are based on the series of interviews conducted with sustainable investors and experts.

3.2 Financial trends and developments

This section describes a number of observations on the recent developments regarding ownership and capital structures, as well as a number of sector-specific trends.

3.2.1 General trends and developments

There are a number of trends and developments related to ownership and capital structures that have taken place in the global financial market in recent years. Such trends are not specific to any of the sectors discussed in this report, but do have relevance for this study. Two important developments are the increasing importance of Exchange Traded Funds (ETFs) and other index funds and the role of national and local banks in direct financing of companies.

The growth of Exchange Traded Funds and other index funds
One trend that has gained significant traction in recent years is the use of passive investment vehicles, such as index trackers and ETFs. According to Morningstar data from July 2014, approximately 36% of all capital invested in equity stocks in the US is through passive funds.[124]

ETFs are investment funds that track the yield and return of a specific index like the NASDAQ-100 Index, S&P 500 or Dow Jones, or indexes based on market sectors including the healthcare, technology, financial or even currency and commodity markets. There is very little published material specifically addressing ETFs in the canned tuna or cultured shrimp sector, although there is an ETF stock encyclopaedia that tracks commodities, including beef and soy.[125] The key difference between ETFs and other types of index funds is that ETFs aim to replicate the index’s performance rather than

[124] Marketwatch, ‘Passive investing will keep gaining ground: Vanguard expert’, 1 September 2014, http://www.marketwatch.com/story/why-passive-investing-still-has-a-long-runway-2014-08-27 (26 March 15).
[125] http://etf.stock-encyclopedia.com/category/commodity-etfs.html

try to outperform it. ‘They [ETFs] don’t try to beat the market, they try to be the market.’[126] ETFs are traded on the market in the same way common stocks are traded, allowing retail investors to invest in a set of stocks without having to actually purchase these stocks. There are many different types of ETFs, including ‘synthetic’ products that use derivatives to create exposure, instead of tracking an index through a basket of stocks.[127]

Although ETFs have existed since the 1980s, the market has become increasingly popular over the last decade for two key reasons. First, since ETFs are set up to track an index, algorithms and computers can be programmed to ‘passively manage’ the investment, which lowers administrative costs for the investor. Second, tax advantages in the way ETFs shares are created and redeemed mean that they generate lower capital gains than a mutual fund, lowering capital gains tax.

Text Box 1: Passive investors

Institutional investors with passive strategies will invest in a large number of companies through ETFs or other index trackers. As Piet Klop of PGGM explains, ‘This is at odds with our goal to be a sustainable investor, since we cannot decide what companies we invest in’. Nonetheless, passive investors do have a number of options to include sustainability in their investments.

Tal Ullmann of Sustainalytics describes the three options for passive investors to implement their ESG strategy:

> ‘Firstly, they can exclude companies. Secondly, they can and overweigh stocks on the basis of ESG performance. And thirdly, they can use engagement strategies.’

Index funds can be designed in such a way that they exclude the worst performing companies, and this can be an effective way to generate influence. It should be noted that any ESG filter would have to be included during the design phase of the financial product, or be amended in the prospectus in order to avoid violations of fiduciary responsibilities. Many of the large mutual funds that feature in this report do offer custom-made index trackers for their clients. Some institutional investors, such as PGGM, have designed their own index fund. Theirs follows the FTSE All-World index, but excludes the 10% companies with the worst ESG scores.

With regards to engagement, some argue that the fact that passive investors have limited options to divest from companies is actually conducive to their engagement strategies. By definition, they will be long-term investors that have the possibility to have meaningful discussions with a company’s management. They can also use their proxy voting to apply pressure on a company’s management. Passive investors are increasingly setting up ESG or sustainability desks and joining initiatives such as the UNPRI, and this provides opportunities to include them in engagement efforts.

The role of development banks, regional, national and local banks

Another trend which is relevant to all supply chains discussed in this report is the financing of companies by regional, national and local banks, as well as by development banks. Given that development bank projects are financed by public funds and are therefore subject to specific performance standards, in principle there should be more leverage options with those companies receiving loans from publically funded development banks.

Some of the important companies in the canned tuna sector are financed through national or regional banks. Thai Union, which produces both canned tuna and cultured shrimp is financed in part through the Japanese bank Sumitomo. The Japanese Maruha Nichiro, which also produces both shrimp and tuna, is financed exclusively by Japanese banks. The Japanese conglomerate Mitsubishi, producer of both shrimp and tuna, also is financed by Japanese banks.

126 http://www.nasdaq.com/investing/etfs/what-are-etfs.aspx

127 R.Wachman, ‘New warning over exchange traded funds’, 15 December 2011, http://www.theguardian.com/business/2011/dec/15/exchange-traded-funds-warning (29 August 2014).

In the cultured shrimp sector the impact of national and regional banks is larger than for the canned tuna sector. Five large companies in the cultured shrimp sector receive some or most of their financing from national or regional banks. Uni-President, the Taiwanese conglomerate, is financed by a combination of loans from Taiwanese, Vietnamese and Thai banks. Nutreco, the Dutch animal nutrition and fish feed company, is mostly financed by European banks, except for one Japanese loan. CP, the Indonesian shrimp and fish feed company, is exclusively financed by Indonesian banks. The Spanish fish and shrimp company Pescanova, gets most of its financing from Spanish banks. The Indonesian shrimp company Sekar Bumi also gets financing from at least one Indonesian bank.

Companies that are involved in soy bean production get more financing from national or regional banks, than from foreign banks, although there are a few exceptions. Many of the Japanese, American and Chinese soy producers get bank loans issues by national banks. Other companies, including for example Japanese soy producer Sumitomo, have links with several financial institutions such as a long list of Japanese and regional banks, European banks, development bank loans from the World Bank's IFC, the Development bank of Japan, and the Korean Development Bank. Asian soy crusher Wilmar International has a very long list of loan issuers, most of which are also Asian, although there are also European, Middle Eastern and American lenders. Hong Kong based soy producer Noble Group has a very long list of loan lenders including European, American, Japanese, Chinese and Indonesian as well as Middle Eastern. Noble Group also has loans from public banks including the EBRD, the World Bank's IFC, the Export Development Bank of Canada as well as the Inter-American Development Bank. Brazilian soy companies receive loans at three levels: national banks, regional Latin American banks as well as from American, European, and Japanese banks. For example, half the loans issued to the Brazilian soybean producing Algar are from Brazilian or regional banks, whilst the other half are international. For Amaggi, one third of the lenders are regional whilst the remaining lenders are international. BRF, also has one loan from the Brazilian Development bank. Most of US soy producer Syngenta's loans come from American or European banks, although there is one Latin American regional bank involved in a Syngenta loan.

Argentinian soy and beef processor Vicentin, has loans from US and European banks as well as one from the FMO, or the Dutch Development Bank. JBS, the Brazilian beef producer has a very long list of lenders including American, European and North American while the Brazilian Minerva has loans from the development banks Banco de Amazonia, a Brazil government research fund FINEP and the World Bank's International Finance Corporation.

Retail companies including Tesco, Tyson, and Casino, get loans mostly from regional, or western banks with the exception of a Japanese loan for Tesco and an Indian loan at Tyson. US Wal-Mart, and its subsidiary ASDA have loans with American, Japanese, and European banks. China Resources Enterprise also has loans both from Western and from Chinese banks.

3.2.2 Skipjack canned tuna

Sources of capital

The canned tuna supply chain is mature and consolidated with a small number of large companies dominating various segments of this supply chain. These large companies are able to tap into international financial markets and have relatively easy access to large sums of capital. The widely available capital is not only used by the large companies in these sectors to increase their production but also to conduct mergers and acquisitions in order to gain market share and consolidate their dominant position.

Private equity

Private equity plays a role in the canned tuna supply chain with recent or current activity in 4 of the companies identified.[128] Private equity consists of investors and funds that make investments directly into private companies or conduct buyouts of public companies that result in a delisting of public equity.[129] Many private equity firms conduct what are known as leveraged buyouts, where large amounts of debt are issued to fund a large purchase. Often private equity investors take significant holdings, which can include seats on the board, or even a controlling stake where their managers are installed to implement a new strategy. Private equity investors tend to hold onto their stake or the whole company until the restructuring or new strategy is in place before divesting at a profit either through a sale or Initial Public Offering (IPO).

Text box 2: Private equity

Private equity is the ownership form with the most direct control over a company's decisions. Private equity owners will often hold one or more seats on the company's management board and tend to have a clear intention to shape a company's strategy. In theory, they can help drive a company's approach to ESG. In practice, only a small group of private equity firms considers sustainability elements in their investments. But, as Daniel von Moltke explains,

> 'The world is changing. Private equities are realising that they need to address ESG issues as part of their processes. Private equities that are active in food supply chains will be aware of the long term risks related to natural resource depletion, if they do their homework.'

Influence can be had by funding those private equities that have a clear sustainability strategy and by engaging them on specific issues. As money is committed to a private equity fund before it is known what companies the fund will invest in, this dialog can be constructive during the design phase of the fund. Once a fund is set up, the legal structure of general and limited partners can block a private equity fund from applying sustainability criteria, as they might come at the detriment of its financial performance and expose the fund manager to legal risks.

The tuna companies included in this study that have significant private equity investors appear to have lacked the capacity to ramp up their operations, as is the probable case with Thunnus Overseas Group. Another explanation could be that these companies have had some financial distress, possibly due to the inability to service debt agreements, combined with the high operational costs and the inability to fully pass these costs on to consumers through higher pricing. This is likely the case for both Bumble Bee Foods and Conservas Garavilla. Bumble Bee Foods has been in private equity hands since at least 2003 when it was divested from the American food firm ConAgra and sold to Centre Partners Management for an undisclosed sum.[130] Lion Capital bought Bumble Bee from Centre Partners in 2010 for USD980m.[131] Thai Union has agreed to buy Bumble Bee in an USD1.5bn deal, which is currently pending approval by US anti-trust authorities.[132]

Developments in shareholding

In the tuna supply chain there have been some ownership developments in recent years. For example the holding company of Maruha Nichiro held a mere 0.15% of the shares in 2010, but embarked on a

[128] Princes Food & Drink, Bumble Bee, Thunnus Overseas Group and Conservas Garavilla SA.

[129] Investopedia website, 'Private Equity', http://www.investopedia.com/terms/p/privateequity.asp%20 (26 March 2015).

[130] 'Con Agra Sells Bumble Bee Canned Seafood Unit,' New York Times, (20 May 2003) http://www.nytimes.com/2003/05/20/business/company-news-conagra-sells-bumble-bee-canned-seafood-unit.html%20 (8 July 2014)

[131] Centre Partners, 'Centre Partners Completes $980 Million Sale of Bumble Bee Foods to Lion Capital,'(no date), http://www.centrepartners.com/news_article/centre-partners-completes-980-million-sale-of-bumble-bee-foods-to-lion-capital/ (8 July 2014).

[132] Bangkok Post, 'AP report 'won't hurt TUF deal', 26 March 2015, http://www.bangkokpost.com/business/news/508571/ap-report-won-t-hurt-tuf-deal%20 (26 March 2015).

large-scale share buy-back programme and now controls more than 69% of the company's shares. Share prices soared at the time of this buy-back.[133]

3.2.3 Cultured shrimp

Sources of capital

Contrary to the tuna supply chain, the cultured shrimp supply chain is still relatively young. It is characterised by a large number of smallholder farms and the high risk of crop failure (e.g. diseases such as EMS). As a consequence the access to capital from financial markets is relatively limited.

Companies in the shrimp supply chain often depend on private savings or family capital as they generally have a lower level of access to financing from commercial banks and/or investors. Developing supply chains, like the cultured shrimp supply chain, also often benefit from (export) subsidies and development projects financed by governments and international donors as sources of capital/investment funds. The shrimp supply chain therefore also taps less into international capital markets. Exceptions are the large Japanese groups and the strong agribusiness companies in China (also called 'dragonheads'). These companies have access to international capital markets through their import and distribution companies in the Western markets. Although these companies are in many cases involved in processing activities in various Asian countries, involvement of these companies at the farming level is in general limited. Financial resources at the farming level are as a result in general limited to local banks, informal channels, and family resources.

Private equity

Similar to the skipjack canned tuna supply chain private equity also plays a role in the cultured shrimp supply chain with recent or current activity in 2 of the companies identified.[134] For the cultured shrimp sector private equity played a role at Heiploeg. The company has had private equity investors as far back as 1995 when CVC Capital Partners had a stake.[135] Unable to service its debt, Heiploeg filed for bankruptcy in January 2014 and part of the firm was taken over by its Dutch peer, fishing firm Parleviet & Van der Plas.[136] Heiploeg's Belgian unit, Morubel, was taken over by the Amsterdam-based private equity firm Bencis Capital Partners for an undisclosed sum.

Companies with less than 50% floating shares

About a third of the profiled companies in the cultured shrimp supply chain are listed at a stock exchange, but continue to have a majority holder as less than 50% of its shares are traded on these exchanges. This is particularly the case for some of the Asian companies included in this research. Examples of such companies include Charoen Pokhpand Foods, Surapon Foods and Minh Phu Seafood. Charoen Pokhpand Foods is a subsidiary of Charoen Pokhpand Group with a minority listing at the Bangkok stock exchange. The majority of shares are indirectly held by the Chearavanont family. Thailand-based Surapon Foods only has 17% floating shares, with the remaining shares owned by a number of Thai families. Minh Phu Seafood from Vietnam also has a minority listing of 26%, with the majority of the shares held by members of the board of management and French billionaire Francois-Henri Pinault.

133 Seafood Source website, 'Maruha Nichiro soars on share buyback', 6 August 2012, http://www.seafoodsource.com/en/news/supply-trade/20334-maruha-nichiro-soars-on-share-buyback (24 July 2014).

134 Minh Phu Seafood Corp, Heiploeg.

135 CVC Capital Partners, http://www.cvc.com/Our-Portfolio/Historical-Portfolio.htmx?ordertype=5

136 Parevliet & Van der Plas New Owners of Heiploeg,'(29 January 2014) http://www.parlevliet-vanderplas.nl/news/tabid/288/ID/4/Parlevliet-Van-der-Plas-new-owners-of-Heiploeg.aspx (8 July 2014).

Textbox 3: Companies with less than 50% floating shares

Companies who have less than 50% of its shares traded on the market, or who are majority owned by the founding family are less impacted by financial strategies. The majority owner will always have the final say and may not respond to issues raised by minority shareholders. As Peter van der Werf of Robeco says, ‘Our expectations will be different because we realise that we have less influence on the broader strategy.’

However, there are a number of engagement strategies that can still be applied successfully. Piet Klop indicates that there is room to engage on issues that fall within the mandate of the CSR manager of a company. And Rosl Veltmeijer of Triodos explained that there is something to gain for the company in question.

Daniel Von Moltke explains that there are differences in how family-owned companies respond to such engagement efforts: ‘Some of the family owned companies do not want to hear from the minority investors, but others see them as a form of free consulting.’

Developments in shareholding

In the cultured shrimp supply chain there have been some ownership developments in recent years. The holding company of Charoen Pokphand for example holds 25% less shares now than it did in 2010 while all other types of investors, including corporations, banks and investment advisors increased their ownership. For almost all companies, shares held through investment advisors, such as exchange traded funds or mutual funds, have increased across the board. Minh Phu Seafood is an exception as private equity increased its share.

3.2.4 Soy and beef

Credit Crunch

Moves by Chinese-centred companies to secure their supply of soybeans and vertically integrate their operations has not come without setbacks. The financial crisis and slowing down of the Chinese economy led the crushing of soybeans to be reported as being unprofitable in China, which made banks withhold letters of credit to some purchasers. As a result some Chinese importers defaulted on soy cargoes at the beginning of 2014 with buyers struggling to obtain credit. In April 2014, some Chinese soybean buyers reportedly defaulted on US and Brazilian soybean cargos due to negative crush margins and problems in securing credit. In a May 2014 news report, setbacks in Japanese giant Marubeni’s rapid expansion plans in China were being blamed increasingly on stiff competition on the Chinese soy market and customer defaults on soybean sales. Luke Matthews, commodities strategist at the Commonwealth Bank of Australia in Sydney noted that ‘the reality is that the world is reliant on Chinese imports of soybeans to maintain price strength’.

Divesting to Cut Debt

Various soy and beef companies have reported exiting markets or divesting assets in recent years in order to reduce their overall debt. Without a more detailed, historical analysis of each company, it is not clear whether there are structural or systemic issues pertaining to the sector which impacts these companies. The Hong Kong based Noble Group, for example, sold a majority stake in its agricultural business to COFCO and reportedly used the proceeds to reduce its debt. Marfrig also reportedly used some of the proceeds from the USD400m sale of its US and European distribution units to reduce its debt in 2011 as well as selling two of its units to JBS in 2013 for USD2.75bn in further attempts to cut its level of debt.

Textbox 4: Bondholders and loan issuers

Investors that provide debt finance can also influence a company's ESG approach. Their relationship with a company is different from a shareholder's, as bondholders and loan issuers do not have voting rights and their primary interest is to ensure that their bond or loan is repaid, while a shareholder has an interest in the overall long term financial health of ta company.

However, sustainable investors can still engage effectively with a company that they only hold bonds in. As Peter van der Werf explains: 'We do not experience any differences in the engagement process when we approach a company as a bondholder, because a company might also regard us as a future shareholder.'

An interesting development in the bond market is the growing popularity of 'green bonds', used to finance particular sustainable activities. As Tal Ullmann explains:

> 'Green bonds require the issuing company to communicate clearly about how ESG issues are considered as part of the projects that will be financed through the green bond. By speaking to investors about a green bond, the conversation automatically goes into the direction of how the company regards ESG issues and what it does to address them.'

The sphere of influence is different for the loan issuers. While the most direct relation between management of a company and a debt provider is with the bookrunners and arrangers of syndicated loans, they can only help shape a company's decisions before a loan is issued. As Rens van Tilburg explains:

> 'During that phase a financial institution will assess whether a company operates within their ethical norms. Once the loan is issued, financial institutions can no longer have any influence. So when trying to engage through loan issuers, it's important to realise that you can only encourage them to take your issues into account the next time a company is requesting a loan.'

It can be argued that companies that have a higher debt ratio are more open to discussing ESG demands from debt issuers. Tal Ullmann:

> 'Highly indebted companies will see their credit rating go down, sometimes to levels that exclude them from investments by pension funds and other large institutional investors. Such companies may therefore see ESG issues as a way to increase their attractiveness to investors.'

3.2.5 Retail

Private equity taking a stake in US retail companies

Two of the four largest US-based retail companies are owned by the same private equity firm, Cerberus Capital Management. Supervalu, along with two other buyers including the private equity firm Cerberus Capital Management, bought the Albertsons supermarket chain in 2006 in a deal valued at USD17bn.[137] The carve up between the three buyers was complicated and Supervalu's portion amounted to USD12bn, which left it with massive debt.[138] Supervalu never recovered from this deal and subsequently had to sell five super market chains, including the formerly acquired Albertsons, to a consortium led by Cerberus Capital Management. The deal, which was valued at USD3.3bn, included the consortium buying up to 30% of Supervalu's equity.[139] In 2014, the same Cerberus Capital Management purchased Safeway in an USD9.2bn deal, after which it merged Safeway and Albertson's.

137 O.Oran, L. Baertlein, 'Supervalu selling 877 supermarkets in $3.3 billion deal,' (10 January 2013) http://www.reuters.com/article/2013/01/11/us-supervalu-results-idUSBRE90A00320130111 (8 July 2014).

138 S.Sarwar, 'What's Going on With Supervalu?' Seeking Alpha, (15 January 2013) http://seekingalpha.com/article/1112321-whats-going-on-with-supervalu%20 (8 July 2014).

139 Cerberus Capital, 'Supervalu Announces Definitive Agreement for Sale of Five Retail Grocery Banners to Cerberus-led Investor Group,' (10 January 2013) http://www.cerberuscapital.com/news/supervalu_announces_definitive_agreement (8 July 2014).

According to one news article, Cerberus are investing USD1.25bn of their own money, while USD7.6bn is financed with debt, making Safeway a highly indebted company.[140]

Cerberus is partially funded by the California State Teachers' Retirement System (CalSTRS). In 2012, CalSTRS called on Cerberus Capital Management to sell its stake in the maker of the weapon that was used in the Newtown shooting tragedy, after which the private equity firm pledged to divest from the company. While this seems to be an exceptional example of a private equity firm responding to societal concerns by one of its investors, it should be noted that the gun company is currently still owned by Cerberus Capital Management, two and a half years after it had pledged to divest.[141]

Retail companies offering banking and financial services
A number of retail companies, including Tesco, Costco and Carrefour are offering banking services in addition to their retail activities. As Tesco describes in its latest annual report, 'Our vision is to be the bank for Tesco customers and to offer simple, transparent and convenient products which reward our customers 'loyalty and strengthen their bond with our business.'[142] Tesco offer credit cards, loans, mortgages and savings. In a similar fashion, Carrefour also offers financing, savings and insurance products to its customers.[143] Costco has partnered with various credit card companies in recent years to offer co-branded credit cards that also function as the company's membership card and that offer rewards to its customers.[144]

Presumably, these banking services provide such companies with liquidity that they would otherwise seek from external funders. While it can be assumed that this trend changes the relationship of these retailers with banks and other financial institutions, the impact of this development of the financing of the retail sector would require additional analysis. Furthermore, it should be noted that a number of companies in the other supply chains, for example the large soy trading companies, also have divisions that undertake financial activities such as hedging and trading of commodities.
While it can be assumed that this development will change the relation of these retailers with banks and other financial institutions, the impact of this development of the financing of the retail sector would require additional analysis.

3.3 Analysis of individual companies

Based on the supply chain results, this section provides an analysis based on the quantitative findings as well as anecdotal and qualitative information gathered via expert interviews.

3.3.1 Skipjack canned tuna

Large international companies with seafood as their core activity
Companies like Maruha Nichiro, Thai Union, Tri Marine, FCF Fishery and Kyokuyo Co., Ltd. are large international companies that are involved in multiple segments of the value chain for canned tuna. For Maruha Nichiro and Thai Union seafood is their core business although they are also involved in other products and services. Thai Union is also involved in multiple segments of the shrimp value chain, while Maruha Nichiro is active in the shrimp and tuna sector. Tri Marine, FCF Fishery, Kyokuyo Co., Ltd. have an important global position in the fishing and trading of tuna for the canning industry.

140 SFGate.com, 'With new owners, Safeway moves on', 29 January 2015, http://www.sfgate.com/business/bottomline/article/With-new-owners-Safeway-moves-on-6049684.php%20 (30 March 2015).
141 Fortune.com, 'California teachers still forced to own rifle-maker, nearly two years after Newtown massacre', 19 November 2014, http://fortune.com/2014/11/19/california-teachers-still-own-rifle-maker-nearly-two-years-after-newtown-massacre/ (30 March 2015).
142 Tesco Annual Report 2014, http://www.tescoplc.com/files/pdf/reports/ar14/download_annual_report.pdf%20 (30 March 2015), p.7.
143 Carrefour Annual Report 2013, http://www.carrefour.com/sites/default/files/RA_VGB_OK_BD.pdf (30 March 2015), p.43.
144 USA Today, 'Costco names Citi, Visa as credit card partners', 2 March 2015, http://www.usatoday.com/story/money/2015/03/02/costco-citi-visa-deal/24253649/ (31 March 2015).

Example: Thai Union Frozen Products
Thai Union Frozen Products is a large Thai company active in both the canned tuna and the shrimp sector. The company and its subsidiaries are major players in the canning industry, and are involved in multiple segments of the shrimp value chain (feed production, farming, processing and exports). Herewith they are an important exporter of canned tuna and shrimp to the US market. With the purchase of MW Brands in 2010 and the announced purchase of Bumble Bee, Thai Union reflects the trend towards consolidation in the canned tuna sector. Only a portion of Thai Union's shares are publicly traded while the founder and his family continue to control a large portion of the company's shares. This limits the ability of minority shareholders to constructively engage in the company's strategy (see Textbox 3). Of the company's various subsidiaries, Avanti Feeds is partially listed, which could provide a more direct engagement point for Thai Union's Indian feed production activities. The company's consolidated debts account for 40% of the company's assets. Most of this debt constitutes loans, while less than 10% of the company is financed through bonds. Bank of America and Rabobank have been identified to participate in both large revolving credit facilities. This suggests that these banks have longstanding relations with Thai Union Frozen Products.

Large international companies involved in a wide range of different (food) products and services
Companies like Mitsubishi, Dongwon Industries, Itochu, the Bolton Group, RD Corporation and Century Canning Corporation Foods are large companies that besides seafood are also involved in a wide range of products and services. Mitsubishi, Dongwon Industries and Itochu belong to a group of large Asian conglomerates. While Dongwon Industries and Itochu are heavily involved in tuna fisheries and trading, Mitsubishi's involvement in the tuna sector is caused mainly by the companies' involvement in Princes. Like other large Japanese companies, Itochu and Mitsubishi have a high floating percentage of outstanding shares (> 85%). The Bolton Group is also involved in other food products and personal care, and has direct links to raw material through its stakes in the Calvo Group and Tri Marine. RD Corporation and Century Canning Corporation are involved in multiple segments of the value chain (fishing, processing, and exports). Century Canning Corporation is active in other food sectors (meat, dairy), while RD Corporation besides food also offers financial services.

Example: Mitsubishi
Mitsubishi, the Japanese conglomerate with more than 400 subsidiaries and businesses, which span among others, the energy, logistics, finance and food sectors, is also the owner of the Princes food and drink group. Princes sells canned fish meat and vegetables, Mazola cooking oil, mineral water and Branston pickles across Europe with a focus in the UK. Better known for its cars than its tuna, Mitsubishi is not a traditional food company. The UK-based Princes was bought by Mitsubishi in 1986, which was a year the company called a turning point as it introduced a new policy, shifting its focus from transactions to profitability.[145] Princes is Mitsubishi's foothold in the European consumer market. From the UK it is also trying to expand into other European markets. The only financial information available for Princes is revenue, which amounts to around 3.6% (2014) of the total Mitsubishi revenues. In addition to its tuna related activities through Princes, Mitsubishi is also a significant shareholder in several other tuna companies through its financial division. It holds 2.82% of Thai Union Frozen Products' shares, 0.3% of Maruha Nichiro's shares and smaller stakes in Itochu, Safeway and Kyokuyo. Almost 90% of the shares of Mitsubishi are publicly traded while the company has a market cap of USD30bn, which is by far the highest of all the tuna companies included in this report.

Integrated companies with tuna fishing and processing as their main activity
The companies in this cluster (Grupo Calvo, Thunnus Overseas Group, Jealsa Rianxeira, Albacora Group, Conservas Garavilla, Frinsa del Noroeste, and Alliance Select Foods) are mainly Spanish companies that are involved in the fishing and processing of tuna for canning. For all companies canned tuna is their core activity, although they are also involved in other seafood products. Most of the companies in this cluster are to a large extent privately owned, although Conservas Garavilla and the Thunnus Overseas Group are financed through private equity.

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[145] Mitsubishi Website, 'Corporate History' http://www.mitsubishicorp.com/jp/en/about/history/ (24 July 2014).

Example: Albacora Group
The Albacora Group is a privately held company, with limited public information available regarding its financiers. The largest known shareholder owns about 20% of the shares. For privately held companies such as Albacora, opportunities for direct engagement through shareholding are very limited. None of the debt issuers have been identified.

Companies that produce consumer brands and are not directly involved in tuna fishing
The remaining companies (Hagoromo Foods and Bumble Bee) are not primarily involved in fishing activities on tuna, but sell canned tuna products through the retail and foodservice channels. Hagoromo Foods has stakes in tuna fishing companies in order to secure their supplies. Bumble Bee sells canned tuna as consumer brand in retail. Bumble Bee is currently in the hands of private equity, but is in the process of being purchased by Thai Union Frozen Products.

Example: Hagoromo Foods
Hagoromo Foods is an important player in the canned sector as the company has a 60-70% market share in the Japanese market for canned tuna. Furthermore Hagoromo Foods is a partner in the Aneka Tuna Indonesia joint venture, and holds minor shares in Thai Union, Mitsubishi and Itochu to secure supplies. The combination of very low debt, and 27% of outstanding shares makes Hagoromo Foods relatively independent from financial institutions for its capital. Given that only the minority of shares are floating, this company might be more open to cooperative engagement than to more confrontational strategies (see Text Box 3). With regard to the joint venture company Aneka Tuna Indonesia, indirect engagement might by an option by working with the other joint venture partners, in particular Itochu, whose shares are all traded and who has many more outstanding loans from financial institutions.

3.3.2 Cultured shrimp

Feed companies
While there are significant differences, this cluster includes companies that are involved in the production of shrimp feed. Nutreco, through its subsidiary Skretting, is a key player in the production of fish, shrimp and animal feed. Charoen Pokphand Foods, the world's largest producer of shrimp feed, is also involved in the production of poultry feed, and is vertically integrated, owning shrimp farms and processing plants. Uni-President Enterprises is also a global player in shrimp feed production and is involved in many other food and non-food products. Japha Comfeed owns shrimp farms and produces shrimp and poultry feed.

Example: Charoen Pokphand Foods
Charoen Pokphand Foods is the large Thai conglomerate active throughout the shrimp supply chain. The company has been identified as one of the market leaders in feed production, shrimp farming and shrimp processing in Thailand, Vietnam and India. Less than half of Charoen Pokphand Food's shares are publicly traded. This means that there is limited room for shareholders to affect strategic business decisions, as the majority vote remains with the company and its founding family. However, other engagement strategies might be effective (see Text Box 3). Charoen Pokphand Foods reports in its annual report that there is a foreign holding limit, which restricts the non-Thai holdings to a maximum of 40% of the company.[146] It is therefore unlikely that the majority owner will divest its controlling share of the company. At the same time, the company has a significant level of debt, at least half of which is in the form of bonds. The largest known bondholder is UBS, which also features with two different vehicles in the top ten largest shareholders. This suggests that UBS is the financial institution with the most interest in Charoen Pokphand, both as a bondholder and a shareholder.

[146] Charoen Pokphand Annual Report, p.61.

Large vertically integrated companies
The companies in this cluster are large companies are often involved in other food and non-food products besides seafood. Pescanova is an exemption because it only focuses on seafood products. Maruha Nichiro, Nissui and Thai Union have seafood as their core business but also are involved in other products. Mitsubishi is a large Japanese conglomerate with many subsidiaries and a wide range of products and services.

Example: Maruha Nichiro
Identified by Intrafish as the largest seafood company in 2013, Maruha Nichiro is a key player in the global seafood sector. Besides diverse activities in the seafood sector, the company is also involved in other frozen and processes foods (including meat), fine chemicals and logistics. Maruha Nichiro holds 88 consolidated companies, of which Taiyo A&F Co., Ltd. is the most important subsidiary in the seafood sector. Taiyo A&F only accounts for 3% of the company's overall revenues. Almost 90% of the shares of Maruha Nichiro are outstanding, while the company is financed for a large part through bank loans. The syndicated loans that have been identified in this study are issued primarily by Japanese banks. It can be argued that given the company's capital structure, such banks have leverage over the company's strategies. See Text Box 4 for a discussion about constructive engagement opportunities of loan issuers.

National vertically integrated companies
CP Prima is heavily involved in fish and animal feed production and has developed a completely integrated shrimp supply chain in Indonesia. Sekar Bumi is a smaller company than CP Prima but is also involved in the production of shrimp feed, and the farming, processing and export of shrimp products. The PTN Group and Surapon Seafood are based in Thailand and both are involved in the farming, processing and exporting of shrimp. Devi Seafoods is a vertically integrated Indian company that is also involved in different segments of the shrimp supply chain (farming, processing and exports).

Example: CP Prima
CP is the largest vertically integrated shrimp company in Indonesia. Feed and processing are the two main business activities that account for 57% and 34% of CP Prima's total revenue, respectively.[147] The company is publically listed, but faced some problems in 2013 when it was almost delisted from the Jakarta stock exchange. The company has been given a timeline to restructure its USD325m of debt.[148] The company has close ties with Charoen Pokphand, the other large Indonesian shrimp company, as a subsidiary of that firm is the largest shareholder in CP Prima. These close ties with CP Foods and its ownership structure make direct shareholder engagement difficult. The company has also been forced to restructure its outstanding bonds as a direct result of a virus spreading through the company's ponds. Given that bondholders have already been forced to accept a loss on their investment, they might currently be in a position to exert more pressure on the company. The high levels of debt might also create an incentive to improve its sustainability performance in order to become attractive to investors (see Text Box 4 for further details). Further investigations into the negotiations of the restructuring would be needed to get a full understanding of the current relationship between the company and its bondholders. Loans have been primarily provided by Indonesian banks, which collectively could engage the company as well.

Processing importers and exporters of shrimp products
The companies in this cluster (Min Phu Seafoods, Pacific Andes and Parlevliet & Van de Plas (Heiploeg) are not primarily involved in the farming of shrimp. The key activities of these companies are the sourcing, processing and exporting of shrimp. While shrimp are the main products for Min Phu Seafoods and Parlevliet & Van de Plas (Heiploeg), Pacific Andes also sources and distributes a range of other seafood products.

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[147] PT. Central Proteinaprima Tbk. (CP Prima), 'Annual report 2013', p. 32, available at http://www.cpp.co.id/Entries.aspx?entry_id=45 (accessed 26 June 2014).
[148] Intrafish, 2014. The Intrafish 150 report; Industry report 2013.

Example: Pacific Andes International
Pacific Andes International is mainly involved in the processing and exporting of fish products. The involvement of Pacific Andes International in the shrimp sector is through its subsidiary National Fish & Seafood, Inc., which belongs to the group of the five largest importers of shrimp in the US. National Fish & Seafood owns the consumer brand for value-added shrimp products Matlaw's. Furthermore Pacific Andes International also owns other consumer brands including Pickenpack, a brand for frozen fish products in Europe. The fact that Pacific Andes International has brand name recognition, might make the company more aware of reputational risk and outsider pressure. The opportunities for direct engagement from shareholders over strategic business decisions are limited, because only 41% of its shares are outstanding and the majority of the shares are held by the founder's family. Pioneer Investment Management clearly stands out as the company's largest bondholder and could be influential in an engagement process. The company's loan issuers are not known.

3.3.3 Soy and beef

ABCD Commodity traders
The ABCD commodity traders (ADM, Bunge, Cargill and Louis Dreyfus) dominate world agricultural flows and are heavily involved in the processing and trading of soybeans and soybean derivates (soybean meal and soybean oil). ADM and Bunge Lts are publically traded while Cargill and Louis Dreyfus are privately owned.

Example: ADM
As one of the four large soy traders, Archer Daniels Midland (ADM) is a company that has integrated vertically throughout the soy supply chain and has operations in all the production countries and markets that are included in this research. ADM said in early 2015 that it would commit to building traceable and transparent agricultural supply chains to curb deforestation.[149] In addition, the company also has a stake of 18% in Wilmar International, the large Asian agribusiness group. Looking at the capital structure of the company, almost all of its shares are traded, and shareholder equity accounts for almost half of the company's total assets. In addition, the company's debt consists primarily of bonds, with a lesser part financed through loans. Looking at the company's shareholders and bondholders, it becomes apparent that insurance companies have significant interests in ADM. State Farm Mutual Auto Insurance is the largest ADM shareholder, while 9 of the ten largest known bondholders are also insurance companies. Some of the other large shareholders of ADM are exchange traded and other passively managed funds.

Other commodity traders
In addition to the ABCD commodity traders there are a number other commodity traders that are active in the processing, trading and transport of soybeans and soybean derivates.

Example: Amaggi
Amaggi is a private, family run dynasty that is financed more by debt than through equity. Amaggi shareholders own 26% of the company and a consortium of banks, with loans starting from 2012, own 59% of the Brazilian firm, according to Bloomberg. Amaggi's operations are capital intensive, which is mostly likely the reason it has borrowed funds from the banks. The Dutch cooperative Rabobank is currently the lead lender to Amaggi. The Brazilian soybean producer has a history of loans with Rabobank as well as through the World Bank's International Finance Corporation, which go as far back as 2001.[150] Despite being privately owned Amaggi is a rare example where investors can engage a closely held company.

Company specifically focused on animal feed, where soy is used as an input
The use of soy, specifically soybean meal in the production of animal feed is a driving factor in the growth of soybean production. This demand is a direct result of the growing demand for meat (poultry, pork and beef) and the efficiency demands this growing demand is placing on meat

[149] J.Lewis, J.Bunge, "ADM to Adopt No-Deforestation Policy for Soy, Palm Oil," WSJ, March 31, 2015
[150] J. van Gelder, 'Bank loans and credits to Grupo Andre Maggi,' CEBRAC, 4 June 2004, p.2.

producers. While the feed industry in Europe is splintered and lacks consolidation there are a small number of large companies, some of which produce a wide range of feed for various sectors, including aquaculture.

Example: Nutreco NV
As an animal nutrition and fish feed company, Nutreco is both involved in the shrimp sector and in the soy sector and operates in multiple supply chains. Previously listed on the Amsterdam stock exchange, Nutreco was recently bought by SHV Holdings, a family-owned Dutch investment firm in a takeover that valued Nutreco at EUR3.18bn (USD3.6bn). The deal, which was sealed in March 2015, came after a bidding jostle between the Fentener van Vlissingen family's SHV Holdings and the US agrichemical behemoth Cargill, Inc. Nutreco's fish feed business, operating under the name, Skretting, is Nutreco's biggest segment and reports around 40% of overall group sales. The Fentener van Vlissingen family's SHV Holdings is more transparent than some other closely-held, private family empires in that it publishes annual reports and some financial information.

Rising Asian giants
Growing Chinese demand is changing the dynamics of the soy supply chain, with the ABCD companies facing increasing competition from large multinational companies based in the east. Examples of the companies that are becoming increasingly active in the soy supply chain include COFCO (China), Wilmar (Singapore), Marubeni (Japan), Somitomo (Japan) and Itochu (Japan).

Example: Marubeni
Marubeni is one of several Japanese conglomerates that have been included in this research. The company is active in a wide variety of sectors and has several hundred subsidiaries. While the company is currently the largest importer of soybean to China, the company has announced a divestment plan for its Chinese soy operations. Almost all of Marubeni's shares are traded, while the company is heavily financed through debt. Please see Text Box 4 for a discussion on debt issuers. The company's largest shareholders are large Japanese and American financial institutions, including JP Morgan, Capital Group and Barclays Bank. The company's largest known bondholders, which might have influence as the majority of the company's debt is in the form of bonds, are primarily large Japanese institutions. Mitsubishi, itself active in the tuna supply chain through its subsidiary Princes, is one of Marubeni's largest bondholders.

Global meat/food companies
Consolidation and vertical integration are two noticeable developments of the various meat supply chains, with beef no exception. The largest companies are responsible for an increasing percentage of the meat supply with operations in an increasing amount of location and markets globally.

Example: JBS
JBS is the largest beef producer in the world. In its activities, it also uses large quantities of soy as animal feed, making it an important actor in both the beef and the soy supply chain. The company started as a family business, and while nearly a third of the company's shares are publicly traded, the Batista family still controls a large share of the company's stakes. Therefore, engagement on the company's strategic decisions through shareholding is limited and a cooperative approach might be most feasible when attempting to engage with JBS (see Text Box 3). A significant percentage of the publicly traded shares is held by the Brazilian Development Bank, which has pumped large amounts of money into the company over the last years. According to an article in the Washington Post, the USD4.4bn that the bank provided JBS between 2008 and 2010 turned the company from a relatively minor player to the largest beef producer in the world and allowed the company to acquire a range of other companies.[151] The company has significant debts, much of which is provided by syndicates of international banks. The Rabobank has provided high amounts of credits and loans, and is involved in almost all the syndicated facilities that have been identified in this study.

[151] The Washington Post, 'A bank that may be too big for Brazil', 14 December 2013, http://www.washingtonpost.com/world/the_americas/a-bank-that-may-be-too-big-for-brazil/2013/12/14/5fa136d8-5c4f-11e3-8d24-31c016b976b2_story.html%20 (25 July 2014).

3.3.4 Retail

Globally active retailers

A number of the world's largest retailers have are globally active and include expansion into new markets part of their business strategy. Wal-Mart, the largest US company in terms of revenue is for example present in 26 countries while Carrefour operates over 10,800 stores in 33 countries and Tesco employs more than 500,000 people in 12 markets.

Example: Wal-Mart

Wal-Mart is the world's largest retail company, which operates stores in the US and 26 other companies. The company controls various brands and formats, including the Asda stores in the UK. In addition to food products, the company also sells a range of other merchandise. It generates approximately 60% of its revenues from the US and 40% from its international activities. Wal-Mart is another example of a company with a minority stock listing and a founding family that still holds a controlling share (see Text Box 3 for further details about the implications for shareholder engagement). Despite this ownership structure, the minority shareholders have recently succeeded in their engagement on minimum wages and executive bonuses, with the company announcing to increase the minimum wage of 500,000 of its lowest US-based employees. Approximately one third of the company is financed through debt, primarily in the form of bonds. The company's largest bondholder, and therefore a potentially influential financier, is Dimensional Fund Advisors, who became the largest bondholder by far in November 2014 with almost 30% of the outstanding bonds.

Retailers with a regional focus

Some retailers choose not to pursue a strategy of global expansion, instead opting to focus on their domestic market and/or markets within a particular region.

Example: Kroger

The Kroger Co. is a large US-based food, drug and general merchandise retailer with store formats that include grocery, multi-department or combo stores, convenience shops and jewellery stores. The company also has some manufacturing and processing facilities including bakeries, beverage plants, deli and grocery plants and dairies, which supply approximately 40% of the corporate brands sold in its retail outlets. Kroger has more than 2,500 supermarkets in the US including Dillons, Ralph's, Food 4 Less, City Market and Smith's, among others. Revenue for the firm, which amounted to USD108.5bn in 2014, was boosted by high margins on fuel, due in part to almost half of its retailers also having gas stations on site, although its retail business also grew by 13% in 2014. Almost all of Kroger's shares, or 94%, are publicly listed. The top shareholders, including Blackrock, Vanguard, Fidelity's FMR LLC and State Street, are all providers of passively managed funds. The Kroger Co. Savings Plan, which is a Kroger employee stock ownership and savings plan is also included in the list of the top five holders. Hedge funds and pension funds are almost equally represented with around 3% of total equity. However, equity accounts to only 30% of the company financing, given that around 70% of Kroger is financed by debt, mostly by corporate bonds and one big syndicated bank loan. Vanguard is the top bond holder, followed by a slew of insurance companies.

Discount retailers

Discount retailers sell products at prices lower than the typical market value. They may offer a wide assortment of goods with a focus on price rather than on service, display, or selection of products that customers can choose from. Aldi and Lidl are two well-known European discounters while Costco is the most well-known US discount retailer.

Example: Costco

Costco is a membership-only retailer that offers a wide range of products. In 2014, it was the second largest retailer in the United States and the third largest in the world. It offers memberships to small and medium sized businesses as well as retail consumers. In addition to its retail activities, Costco also operates a manufacturing business, which includes meat packaging. Costco has a market cap of almost USD65bn, with all of its shares traded on the NASDAQ stock market. The company is primarily financed with equity, while the 22% debt consists exclusively of issued bonds. Capital Group, the company's largest shareholder is a privately held investment manager. Other large shareholders include the usual providers of ETFs and index funds, as well as Jennison Associates, an asset manager with an active investment strategy. Most of the company’s bonds are held by insurance companies, of which Northwestern Mutual is the largest with more than 2% of the company’s outstanding bonds.

High-end niche retailers
In contrast to the discount retailers, high-end niche retailers focus on quality and cater to the more affluent consumer. They generally offer products that are locally produced and in-season, or those that are certified as being organic, natural or responsibly produced.

Example: Wholefoods Markets, Inc.
Whole Foods Market, Inc. owns and operates a chain of natural food supermarkets in the United States, Canada and the UK, although the vast majority of sales come from the United States. The company’s stores offer produce that has been minimally processed, and that are free of artificial flavours, sweeteners, colours, preservatives, and added chemicals. The upscale grocer prides itself on selling fresh and organic produce. Whole Foods also develops, produces and markets vitamins and nutritional supplements. Established in 1980 in Austin Texas, Whole Foods Market went public in 1992 and today, 99% of Whole Foods shares are listed on the NASDAQ stock exchange. Serving a niche but growing market, Whole Foods had annual sales in 2014 of USD14.91bn. Whole Foods is also almost entirely financed by shareholder equity, which is unique in the supermarket business. According to Forbes, there are no other supermarket retailers in the US that are practically debt free. The ten largest Whole Food shareholders, including Blackrock, Vanguard, Baillie Gifford and Goldman, own almost 45% of the entire company. Many of the Whole Food investors are passively managed funds, including the two biggest, Vanguard and Blackrock. The vast majority of equity holders, or 89.81%, are investment advisors while the second largest investment group are hedge funds followed by pension funds.

3.4 Analysis of supply chains

This section discusses the most important financiers of each of the supply chains and the retail sector. This section is based on a quantitative analysis, whereby the data from each of the company profiles has been aggregated to identify those financial institutions that have ties to the most companies in each of the supply chains. For each of the supply chains, the number of financial ties is discussed, without specifying the size of these investments. For the retail section, both the number of financial ties are discussed as well as the size of the investment broken down by type of financing (shares, bonds and loans).

3.4.1 Overall analysis

When analysing which financial institutions have ties to most different companies, a clear difference emerges in the way in which the beef and soy supply chains are financed as compared to the cultured shrimp and canned tuna supply chains. One important difference lies in the role that passively managed funds play. In the cultured shrimp and canned tuna sectors, Fidelity, State Street and Vanguard have ties to most different companies. These companies are among the largest providers of Exchange Traded Funds (ETFs) and other index-tracking mutual funds - securities that track an index, a commodity or a basket of assets. Such vehicles commonly do not have fund managers that actively manage the fund on a daily basis, and are therefore a low cost option for retail investors. On the other hand, the list of financial institutions with ties to most companies in the beef and soy sector feature more consumer banks, such as Rabobank, ING, Credit Agricole, JP Morgan and Credit Suisse.

While passive investors are seen as being less active engaging companies on sustainability issues, there is growing awareness. See Textbox 5 for more discussion about the susceptibility of companies whose shares are through ETFs.

Text Box 5: Companies whose shares are held through ETFs

Investments made through ETFs pose serious challenges for ESG engagement strategies. As ETFs can be structured financial products, investors might be exposed to a certain stock without actually holding that stock. As Daniel von Moltke explains: '*There is a lot of replication of exposure that asset owners get without being actual owners of the shares. That may deter them from engaging with a company.*' Piet Klop reiterates this point: '*If you hold an ETF, it might be very difficult to figure out through whom you can vote your shares or otherwise engage. We already see it as a challenge to align our index investments with our sustainability agenda, and this would be even more difficult if you invest through ETFs*.'

However, this does not automatically mean that companies whose shares are mostly held through ETFs are less open to engagement efforts by active investors. As Daniel von Moltke explains: '*To answer that question you need to take a step back. What are the pre-conditions in terms of ownership structure and how do they impact the possible outcome of your engagement? One school of thought says you can only be effective if you can get enough other shares behind you for management to take you serious. However, in practice, you can start moving dialogue and policy changes at the company level while having much less than 50% of the shareholders behind you*.'

On the other hand, well-known commercial banks are more dominant in the beef and soy sectors. One factor that explains this dominance is the fact that more beef and soy companies are financed through syndicated loans, which are mostly issued by such commercial banks. The dynamics for including sustainability considerations in syndicated loans is fundamentally different from shareholdings or bondholdings, as leverage can only be had during the design of such loans (see Textbox 4 for more details). At the same time commercial banks are more likely to have sustainability policies related to their investments and might be more concerned about reputational damage when they have ties to unsustainable companies.

The most prominent commercial banks with financial ties to beef and soy companies include Credit Suisse, JP Morgan, Credit Agricole, Rabobank and ING. Of these companies, Credit Suisse and JP Morgan stand out as having ties to several tuna and shrimp companies (see Table 28).

Table 28

Commercial banks with ties to companies in different sectors

Financial institution	Beef and soy	Shrimp	Tuna	Total
Credit Suisse AG and its subsidiaries	27	7	5	**39**
JP Morgan Chase and its subsidiaries	26	4	6	**36**
Credit Agricole SA and its subsidiaries	27	0	6	**33**
Rabobank and its subsidiaries	28	2	2	**32**
ING Group and its subsidiaries	27	4	1	**32**

Rabobank has a public position statement on sustainable soy in which it outlines how it both assesses and engages its clients in the soy supply chain.[152] Soy is also included in ING's Environmental and Social Risk Framework and in Credit Suisse's Sector Policies and Guidelines.[153] While these are indications that such financial institutions are open to engage on sustainability issues in the soy - and possibly also other- sectors, the extent to which such companies are truly open to improving their impacts on the depletion of natural resources would require additional research. Such research could be aimed to assess the quality of sustainability policies and the extent to which they are implemented in daily business operations, for example when issuing syndicated loans.

With regards to the retail sector, there is a large group of companies that have ties to nearly all retailers. The two commercial banks, Credit Suisse and Deutsche Bank are the top lenders. As retail companies tend to be relatively large, listed companies, they have easy access to the international financial markets. It is therefore not possible to conclude that one group of institutions is more dominant in this sector based on the number of financial ties.

3.4.2 Skipjack canned tuna

When combining the data collected on the 20 tuna companies that have been included in this study, a total of 54 financial institutions with ties to multiple tuna companies have been identified. Of these 54 institutions, 16 financial institutions have ties with 5 or more of these companies. Table 28 lists these 16 companies. Several tuna investors, including Goldman, JP Morgan and Mizhuo hold both shares and finance loans in the same company, while Nomura, Blackrock, Vanguard and Mitsubishi hold both shares and finance bonds in the same tuna companies. Only John Hangcock, Dimensional, Norges and TIA Cref only hold shares in tuna companies.

152 Rabobank Group, 'Rabobank's position of Soy', https://www.rabobank.com/en/images/Soy.pdf%20 (29 August 2014).

153 ING, 'ING Environmental and Social Risk Framework', file://SOMO.nl\Private\Folder Redirection\tim\Downloads\ESR_Framework_EN.pdf (29 August 2014); Credit Suisse, 'Summary of Credit Suisse's Sector Policies and Guidelines', file://SOMO.nl/Private/Folder%20Redirection/tim/Downloads/101020_summary_of_policies_credit_suisse%20(1).pdf (29 August 2014).

Table 29

Financial institutions with ties to 6 or more of the selected Tuna companies

Holder/securities	Maruha Nichiro	Thai Union Frozen Products	Bumble Bee	Mitsubishi	Dongwon Industries	Itochu	Safeway	Supervalu	Kyokuyo Co	Hagoromo Foods	Number of companies with financial ties
State Street Bank and Trust	S	S	B	S	S	S	S	S	S		9
Vanguard Group Inc	S	S		S	S	S	S/B	S	S		8
Bank of New York Mellon Corp	S	S		S		S	S/L	S	S		7
Fidelity Management & Research		S	B	S	S	S	S	S			7
John Hancock Advisers Llc	S			S	S	S	S	S	S		7
Nomura Asset Management Co., Ltd.	S	S		S/B		S/B	S	S	S		7
Wells Fargo and its subsidiaries	S	S	L	S		S	S/L	S/L			7
Dimensional Fund advisors lp				S	S	S	S	S	S	S	7
Blackrock and its subsidiaries	S			S	S	S	S	S/B			6
Credit Agricole				S	S	S/L	S	S	S		6
Goldman Sachs and its subsidiaries	S		B	S		S	S/L	S/L			6
JP Morgan Chase and its subsidiaries						S/L	S/L	S	S		6
Mitsubishi Corp. and its subsidiaries	S	S		S/B		S/L	S		S		6
Mizhuo Bank and its subsidiaries	S/L	S		S/L		S/L	S	S	S		6
Norges Bank		S		S		S	S	S	S		6
TIAA Cref Investment Management	S			S	S	S	S	S			6

S	Shareholding
B	Bondholding
L	Loan issued
S/L	Shareholding / Loan issued
S/B	Shareholding / Bondholding

The list is topped by a number of very large providers of ETFs and other index funds, such as State Street and Vanguard, that hold significant shares and bonds in numerous companies in the canned tuna sector (for example, State Street owns 3.4% of Thai Union's shares, while Vanguard owns 1.3% of Mistubishi, the largest company included in this research). These funds do not have a specific focus on the canned tuna sector.

In addition to such mutual funds, a number of US-based financial multinationals also feature on this list. The Bank of New York Mellon (5), Wells Fargo (5), Goldman Sachs (4) and JP Morgan (4) all hold shares in multiple tuna companies. Another distinguishable group of financial institutions are the large Asian banks and companies, who feature on this list because of their ties with Asian tuna companies. Nomura Asset Management has shares in five tuna companies, while Mizuho Bank holds shares and has issued loans to four companies, including Maruha Nichiro, Mitsubishi and Itochu. In addition to being a large player in the tuna sector itself, Mitsubishi Corp. is also a noticeable financier of Asian tuna companies. For example, it holds 2.82% of Thai Union Frozen Products' shares.

3.4.3 Cultured shrimp

For cultured shrimp, a total of 60 financial institutions have financial ties to two or more shrimp companies have been identified. Table 30 lists the 16 financial institutions that have ties to six or more of the selected cultured shrimp companies.

The list is topped by a number of large publically traded capital providers. According to a recent article in Forbes magazine, Vanguard, Blackrock and State Street are some of the largest providers of low-cost exchange traded funds that are targeted at retail investors. While such funds are often managed passively, meaning that they do not have a specific focus on the shrimp sector, their role in the sector is significant. For example, Vanguard is a large investor in Maruha Nichiro, Mitsubishi and Uni-President, while State Street has significant shares in Charoen Pokphand, Pacific Andes and Thai Union Frozen Products. Fidelity, tied to eight shrimp companies, is one of the world's largest mutual funds, with a significant number of shares in Pacific Andes and a number of large bonds in CP Prima, along with minor shares in several other companies.

A number of banks also feature in Table 19. Credit Suisse, Wells Fargo, KBC and Norges Bank each invest in six or more of the selected shrimp companies. It should be noted however that most of the ties to shrimp companies are through minor shares with the exception Norges Bank's 3.2% share in Nutreco, which is currently in the process of being delisted after a takeover from SHV.

Table 30

Financial institutions with ties to six or more of the selected shrimp companies

Holders/Securities	Charoen Pokphand Foods	Nippon Suisan Kaisha	Pacific Andes Inter-national	Minh Phu Seafood	Maruha Nichiro	Mitsu-bishi	Pesca-nova	CP Prima	Nutreco	Uni-president Enterprises	Thai Union Frozen Products	Number of companies with financial ties
Fidelity and its subsidiaries	S		S			S	S	B	S	S S	S	**8**
State Street Bank and its subsidiaries	S	S	S		S	S			S	S	S	**8**
Vanguard Group Inc	S	S			S	S	S		S	S	S	**8**
Alaska Permanent Fund Corp	S	S	S			S	S		S	S		**7**
Blackrock and subsidiaries	B	S			S	S	S		S	S/B		**7**
Credit Suisse AG	S	S			S	S	S		S	S		**7**
John Hancock Investment Mgt SVS		S	S		S	S	S		S	S		**7**
Wells Fargo Bank National Assoc	S	S			S	S			S	S	S	**7**
Bessemer Group Incorporated		S	S				S	S	S		S	**6**
Charles Schwab Investment Management		S			S	S	S		S	S		**6**
Dimensional Fund Advisors Lp		S	S			S	S	S	S			**6**
KBC Group NV	S			S		S	S		S	S		**6**
Norges Bank	S	S	S			S			S	S		**6**
TIAA Cref Investment Management		S			S	S	S		S	S		**6**

S	Shareholding	L	Loan issued
B	Bondholding	S/B	Shareholding / Bondholding

3.4.4 Soy and beef

We identified a total of 238 financial institutions that have ties to two or more beef and soy companies. Table 31 lists the 14 financial institutions with the ties to 18 or more of the selected companies.

Table 31

Financial Institutions with the most ties to selected companies

Name of Financial Institution	Number of companies
Rabobank and its subsidiaries	23
ING Group and its subsidiaries	22
Credit Agricole SA and its subsidiaries	21
Credit Suisse AG and its subsidiaries	21
BNP Paribas and its subsidiaries	21
Blackrock and its subsidiaries	20
Prudential Insurance and its subsidiaries	19
JP Morgan Chase and its subsidiaries	19
Alliance Bernstein and its subsidiaries	18
Dimensional Fund Advisors Lp	18
KBC Group and its subsidiaries	18
Nikko Asset Management Co., Ltd.	18
State Street Corp. and its subsidiaries	18
Deutsche Bank AG	18

When looking at all the companies active in soy and beef, Rabobank is the financial institution with ties to the most. Twenty-three financial links, through shares, bonds and loans were identified. Rabobank has provided loans of USD100m or more to Noble Group, COFCO, JBS, Smithfield and Amaggi. Furthermore, it holds smaller shares in a range of other beef and soy companies. ING Group has ties to 22 companies, while Credit Agricole, Credit Suisse and BNP Paribas have ties to 21 beef and soy companies. Notable links include Credit Suisse who holds shares, bond and has issued loans to Syngenta AG and ING Group that has multiple ties to Bunge and McDonalds. In total, there are 38 financial institutions with ties to 15 or more beef and soy companies.

The companies involved in the soy and beef supply chains were also grouped depending on the location of their business activities. Table 32 lists the financial institutions with the ties to the most companies per group.

Eight financial institutions have ties to 12 or more of the 13 companies grouped together as globally active. Credit Agricole, ING and JP Morgan Chase are the most influential financiers with ties to all 13 companies grouped in this category. In particular, there are 9 companies that have both received loans from JP Morgan, and of which JP Morgan holds shares or bonds. Some of the loans JP Morgan provides to these companies are of considerable size. For example, it has issued an USD1.9bn facility to Tyson Foods and an USD800m facility to DuPont. In contrast, the loans issued by Credit Agricole and ING Group to these companies are generally in the range of USD10m to USD100m. Five other financial institutions, Blackrock, BNP Paribas, Credit Suisse, Prudential and Rabobank, have ties to all but one of the companies in this category.

Nine companies were identified as being primarily active in Latin America with 28 financial institutions having ties to these companies. 3 financial institutions had ties to more than 2 of the nine companies in this category. Rabobank has issued loans to 4 of the 9 companies while Credit Suisse, primarily through shareholdings, and ING Group, through loans, have ties to 3 companies. Marfrig stands out as a company that is tied to all three of these financial institutions, with an USD240m loan by Rabobank, an USD180m loan by ING Group and smaller shareholding by Credit Suisse.

Table 32

Company ties of financial institutions based on location of company activities

Name of financial Institution	# of companies FI has ties to
Global	**13**
ING Group and its subsidiaries	13
Credit Agricole SA and its subsidiaries	13
JP Morgan Chase and its subsidiaries	13
Rabobank and its subsidiaries	12
Credit Suisse AG and its subsidiaries	12
BNP Paribas and its subsidiaries	12
Blackrock and its subsidiaries	12
Prudential Insurance and its subsidiaries	12
Latin America	**9**
Rabobank and its subsidiaries	4
ING Group and its subsidiaries	3
Credit Suisse AG and its subsidiaries	3
Asia	**9**
Nikko Asset Management Co., Ltd.	6
31 other financial institutions	5

Nine beef and soy companies have been identified as being primarily active in Asia. There is a large group of 34 financial institutions that have ties to five or more beef and soy companies, with Japanese Nikko Asset Management standing out with six ties. Nikko holds shares in Wilmar, Marubeni, COFCO, Heilongjiang Sumitomo and Itochu, while also holding bonds in Itochu. Sumitomo is also a noticeable investor in five companies, with multiple forms of financing to Wilmar, Marubeni, Sumitomo and Itochu. Rabobank and Credit Agricole both provide multiple sources of financing to three of the five Asian companies it has ties with.

Table 33a

Financial institutions with ties to seventeen or more of the selected soy and beef companies

Holders/Securities	Aceitera General Deheza SA	AG Processing Inc	AG Processing Inc	Archer-Daniels-Midland Co	Beidahuang Group	Brasil Foods	Bunge Ltd	Caramuru Alimentos	Cargill Inc	China Grain Reserves Corporation (Sinograin)	Chinatex Corp	COFCO	E.I. DuPont de Nemours	Grupo Andre Amaggi	Itochu Corp	JBS SA	Louis Dreyfus Commodities	Marfrig Global Foods SA
Rabobank and its subsidiaries				S			S	L	L			S/L	S	L	S	S/L	L	L
ING GROUP and its subsidiaries				S		S	S/L		L			S	S	L	S	S/L	L	L
Credit Agricole SA and its subsidiaries				S		S	S/L		L			S	S		S/L	S	L	
Credit Suisse AG and its subsidiaries				S		S	S/L					S	S		S	S/L	S/L	S
BNP Paribas and its subsidiaries				S		S	S/L		L			B	S	L	S	S	L	
Blackrock and its subsidiaries				S		S	S					S/B	S		S	S	B	S
PrudentiaL Insurance and its subsidiaries				S/B		S/B	S		B			S	S/B		S	S/B		
JP Morgan Chase and its subsidiaries				S/L		S/L	S/L		L			S/B/L	S/L		S	S/B/L	L	
Alliance Bernstein and its subsidiaries				S			S					S	S		S	S		B
DimensionaL Fund Advisors LP				S		S	S					S	S		S	S		
KBC Group and its subsidiaries				S		S	S/L					S	S		S	S	L	
Nikko Asset Management CO LT				S	S	S	S					S	S		S/B	S		
State Street Corp and its subsidiaries				S		S	S					S	S		S	S		S
Deutsche Bank AG				S		S	S	L	L			S	S		S	B	L	
Frank Russell Trust Company				S		S	S						S		S	S		
Natixis and its subsidiaries				S			S/L	L	L				S		S		L	
T Rowe Price Associates				S		S	S/B						S		S			B
Fidelity and its subsidiaries				S		S	S					S	S		S	S/B		
Alaska Permanent Fund Corp				S		S	S					S	S		S	S		
Sumitomo Mitsui Banking Cooperation and its subsidiaries				S			S/L		L			S	S		S/B/L		L	
Tiaa Cref Investment Managem				S		S	S					S	S		S	S		
Vanguard Group INC				S/B		S	S/B		B			S	S/B		S	S		
Invesco ltd				S		S	S					S	S		S	S		S

Table 33b

Financial institutions with ties to seventeen or more of the selected soy and beef companies

Holders/Securities	Marubeni Corp	Mc-Donald's Corp	Minerva SA	Molinos Rio de la Plata SA	Monsant Co	Nidera BV	Noble Group Ltd	Nutreco	Smith-field Foods	Sumitomo Corp	Syngenta AG	Tyson Foods Inc	Unilever PLC	Vicentin SAIC	Wilmar International	Zhong fang Group	Number of companies with financial ties
Rabobank and its subsidiaries	S/L	S			S/L	L	L	L	L	S	S	S/L	S		S/L		23
ING GROUP and its subsidiaries	S	S			S	L		S/L	L	S/L	S	S	S		S		22
Credit Agricole SA and its subsidiaries	S/L	S	S		S/L		S/L		S/L	S	S/L	S	S	L	S/L		21
Credit Suisse AG and its subsidiaries	S	S	S	S	S		S/L		L	S	S/B/L	S	S		S		21
BNP Paribas and its subsidiaries	S	S	S		S		S/L	S/L		S/L	S	S	S		S/L		21
Blackrock and its subsidiaries	S	S/B	S		S		S		S/B	S	S	S	S/B		S		20
PrudentiaL Insurance and its subsidiaries	S	S/B	S		S/B		S		S/B	S	S/B	S/B	S/B		S		19
JP Morgan Chase and its subsidiaries	S	S/L			S/L		S/L		S/B/L	S	S	S/L	S		S		19
Alliance Bernstein and its subsidiaries	S	S	B		S		S/B		S/B	S	S	S	S		S		18
DimensionaL Fund Advisors LP	S	S	S		S		S		S	S	S	S	S		S		18
KBC Group and its subsidiaries	S	S		S	S		S/L			S	S	S	S		S/L		18
Nikko Asset Management CO LT	S	S	S		S		S			S	S	S	S		S		18
State Street Corp and its subsidiaries	S	S			S		S		S	S	S	S	S		S		18
Deutsche Bank AG	S	S			S		S/L			S/L	S/L	S	S		S		18
Frank Russell Trust Company	S	S	S		S		S		S	S	S	S	S		S		17
Natixis and its subsidiaries	S	S			S		L			S	S	S	S	L	L		17
T Rowe Price Associates	S	S	B		S		S			S	S	S	S		S		17
Fidelity and its subsidiaries	S	S	S		S		S			S/B	S	S	S		S		17
Alaska Permanent Fund Corp	S	S			S		S		S	S	S	S	S		S		17
Sumitomo Mitsui Banking Cooperation and its subsidiaries	S/B/L	S			S		S/L		S	S/L	S	S	S		S/L		17
Tiaa Cref Investment Managem	S	S	S		S		S			S	S	S	S		S		17
Vanguard Group INC	S	S/B			S/B		S			S	S/B	S/B	S/B		S		17
Invesco ltd	S	S			S		S			S	S	S	S		S		17

3.4.5 Retail

Table 34 lists the 17 financial institutions that have ties to fifteen or more of the selected retail companies.

Most of the 17 retail companies included in this research are large stock-listed companies, with relatively easy access to the international financial markets. The only exceptions are Albertson's, controlled by private equity fund Cerberus Capital Management, and Publix, which is owned by its management and employees. Unsurprisingly, there is a large group of financial institutions that has ties to almost every one of these companies. Looking purely at the number of financial ties, Credit Suisse and Deutsche Bank stand out because they have issued a loan to Albertson's, in addition to holding shares and offering loans to the 15 listed companies. The 15 financial institutions with ties to 15 of the 17 retail companies include the large mutual fund providers and other passive investors, but also a number of large commercial banks such as Credit Agricole and ING Groep. One notable name on this list is the relatively small Italian private bank Banca Fideuram, which does not feature as a large financier for any of the other supply chains discussed in this chapter.

Table 34

Financial institutions with ties to fifteen or more of the selected retail companies

Holders / Securities	WalMart Stores	COSTCO	TARGET	China Resources Enterprise	Kroger	TESCO	Ahold	Albertson's	Carrefour	Whole Foods	Casino	Metro	Marks & Spencer	Delhaize	Publix	Safeway	Supervalu	Number of companies
Credit Suisse AG	S	S	S	S	S	S	S	L	S/L	S	S/L	S	S	S		S/L	S/L	16
Deutsche Bank AG	S	S	S/L	S	S	S/L	S/L	L	S/L	S	S/L	S/L	S	S/L		S/L	S	16
Banca Fideuram Spa	S	S	S	S	S	S	S		S	S	S	S	S	S		S	S	15
Bank of New York Mellon Corp	S	S	S/L	S	S/L	S	S		S	S	S	S	S	S		S/L	S	15
Blackrock	S/B	S/B	S/B	S	S	S	S		S/B	S	S/B	S/B	S/B	S		S	S/B	15
Credit Agricole SA	S	S	S	S	S	S	S		S/L	S	S/L	S	S	S		S	S	15
Dimensional Fund Advisors Lp	S/B	S	S	S	S	S	S		S	S	S	S	S	S		S	S	15
Fidelity	S	S	S	S/B	S	S/B	S		S	S	S	S	S	S		S	S	15
Goldman Sachs Group Inc	S	S	S/L	S	S/L	S/L	S/L		S/L	S	S/L	S/L	S	S		S/L	S/L	15
ING Groep NV	S	S	S	S	S	S	S/L		S/L	S	S	S/L	S	S/L		S	S	15
Invesco, Ltd.	S	S	S	S	S	S	S		S	S	S	S	S	S		S	S	15
JP Morgan Chase & Co	S/L	S	S/L		S	S/L	S/L	B	S/L	S	S/L	S/L	S	S/L		S/B/L	S	15
Legal & General Group Plc	S	S	S	S	S	S	S		S	S	S	S	S	S		S	S	15
Northern Trust Corporation	S	S	S	S	S/L	S	S		S	S	S	S	S	S		S/L	S	15
State Street Corp	S	S	S/L	S	S	S	S		S	S	S	S	S	S		S	S	15
TIAA Cref Investment Management	S	S	S	S	S	S	S		S	S	S	S	S	S		S	S	15
Vanguard Group Inc	S/B	S/B	S/B	S	S/B	S/B	S		S	S	S	S	S	S/B		S	S	15

S	Shareholding	S/L	Shareholding / Loan issued
B	Bondholding	S/B	Shareholding / Bondholding
L	Loan issued	S/B/L	Shareholding / Bondholding / Loan issued

In addition to assessing the number of financial ties with the retail companies, the size of the investments are also analysed for this sector. These overviews, presented in the tables below, are broken down per type of investment (shareholdings, bondholdings and loans issued).

Table 35 lists the financial institutions with the largest average holding of the 17 retail companies included in this research. The four large mutual fund providers Blackrock, Vanguard, State Street and Fidelity top this list, with average holdings of more than 2%. These companies can hold up to 15% of the shares of an individual company, such as is the case in Safeway (which is in the process of being bought by a private equity firm. The Norges Bank, also one of the largest passive investors in the world, has an average share of 1.4% in these companies and a notable share of 7% in Tesco.

Included in this list are also a number of active investors that do not hold shares in the broad range of retail companies, but that do have significant holdings in targeted companies. Silchester International is an example of a financial institution with ties to only three retail companies, but which holds significant shares in each of these retailers (10.0% in Delhaize, 3.9% in Ahold and 2.4% in TESCO).

Table 35

Financial Institutions with the largest average holding of the 17 retail companies selected

Financial institution	Average shareholding
Blackrock	3.426%
Vanguard Group Inc	2.926%
State Street Corp	2.144%
Fidelity Management & Research	1.908%
Norges Bank	1.400%
Silchester Intl Investors Llp	0.955%
Capital World Investors	0.691%
Bank of New York Mellon Corp	0.690%
Pyramis Global Advisors Llc	0.589%
Capital Research Global Investo	0.587%
Dekabank Deutsche Girozentrale	0.567%
Goldman Sachs Group Inc	0.562%
Franklin Resources Incorporated	0.544%
Legal & General Group Plc	0.534%
Northern Trust Corporation	0.529%
JP Morgan Chase & Co	0.515%
T Rowe Price Associates	0.504%

For some shareholdings, more detailed information is available. For example, Vanguard Group Inc. is a substantial shareholder in Costco, with a total of 6.2% of shares. In total, it holds these shares through 48 different funds. Below, an overview is given of the ten largest Vanguard funds. A more detailed look into Vanguard’s holdings reveals that 5.98% of Costco’s shares are passively held through either ETFs or index funds.

Table 36

Ten largest funds through which Vanguard Group Inc holds Costco shares

Portfolio Name	%Outstanding	% of Portfolio
VANGUARD TOTAL STOCK MARKET INDEX FUND	1,77	0,27
VANGUARD 500 INDEX FUND	1,13	0,34
VANGUARD INSTITUTIONAL INDEX FUND	1,06	0,34
VANGUARD DIVIDEND APPRECIATION INDEX FUND	0,59	1,49
VANGUARD GROWTH INDEX	0,52	0,69
VANGUARD DIVIDEND GROWTH FUND	0,47	1,25
VANGUARD MORGAN GROWTH FUND	0,21	1,22
VANGUARD INST TOTAL STOCK MARKET INDEX	0,19	0,28
VANGUARD CONSUMER STAPLES INDEX FUND	0,15	3,30
VANGUARD EMPLOYEE BENEFIT INDEX	0,08	0,33

Table 37 shows the financial institutions that have more than USD500m in outstanding bonds to retail companies. Dimensional Fund Advisors, which tops this list, has USD13.5bn in outstanding bonds in Wal-Mart, but does not hold significant bonds in any of the other companies. The remaining companies on this list are primarily insurance companies, which are traditionally more active in the fixed income market (i.e. bonds). A number of the large mutual fund providers such as Vanguard and Blackrock also feature on this list.

Table 37

Financial Institutions with more than USD500m in outstanding bonds to retail companies

Financial institution	Outstanding bonds (USDm)
Dimensional Fund Advisors Lp	13,499
Vanguard Group Incorporated	2,942
Prudential Insurance Co. of America	1,091
Northwestern Mutual Life Insur	931
Metropolitan Life Insurance Co	918
Blackrock Fund Advisors	774
Allianz Life Insurance Co. of North America	770
American General Life Insurance Co	699

Table 38 shows the financial institutions with more than USD2bn of loans or credit facilities issued to the retail companies. These syndicated loans are primarily issued by commercial banks, and it is therefore unsurprising that names such as BNP Paribas, Citigroup, Credit Suisse and Barclays top this list. BNP Paribas has issued loans of more than USD500m to Wal-Mart and TESCO, while Citigroup, Credit Suisse and Barclays also participated in a large syndicated deal with Albertsons for more than USD1bn each.

Table 38

Financial Institutions with more than USD2bn of loans or credit facilities issued to the selected retail companies

Financial institution	Loans issued (USDm)
BNP Paribas	4,979
Citigroup	4,462
Credit Suisse	3,889
Barclays	3,887
Bank of Tokyo-Mitsubishi	3,812
Bank of America	3,670
JP Morgan Chase Bank	3,615
HSBC	3,357
Goldman Sachs	2,758
Wells Fargo Bank	2,750
Deutsche Bank	2,160

3.4.6 Financial institutions involved in multiple supply chains

Combining the financial institutions that are involved in the shrimp, tuna, beef and soy supply chains and the retail sector (Table 39) reveals that there are 19 institutions with ties to at least 30 selected companies. State Street Bank provides finance (through investments, loans or bonds) to 48 companies that are included in this study.

Table 39

Financial institutions with ties to at least 30 of the selected companies in the four supply chains

Financial institution	Shrimp	Tuna	Beef and soy	Retail	Total
State Street Bank	8	7	18	15	48
Credit Suisse AG	7	3	21	16	47
Vanguard Group	8	6	17	15	46
Blackrock	7	4	20	15	46
Fidelity	8	5	17	15	45

Dimensional Fund Advisors	6	5	18	15	44
BNP Paribas	3	1	21	19	44
JP Morgan	4	4	19	15	42
TIAA Cref Investment Management	6	4	17	15	42
ING Groep	4	-	22	15	41
Credit Agricole	-	4	21	15	40
Invesco	4	-	17	15	36
Deutsche Bank	-	2	18	16	36
Frank Russell Company	4	-	17	12	33
Natixis	3	-	17	13	33
T Rowe Price Associates	2	-	17	14	33
Alliance Bernstein	-	-	18	14	32
Rabobank	3	1	23	4	31
Sumitomo	5	5	17	3	30

4 Conclusions and recommendations

4.1 Introduction

The overall objective of this study was to analyse which parts of the canned tuna, cultured shrimp, soy & beef supply chains and the retail sector are most open to constructive engagement and where the largest market shares in the various supply chains are aggregated. On the basis of Chapters 2 and 3, the authors draw the following conclusions and make the following recommendations related to the overall objective of the study.

4.2 Supply chain analysis

The beef and soy supply chains are inextricably linked. As a result companies that play a role in the soy supply chain are often considered to be active in the beef supply chain. The analysis of the three supply chains, the retail sector and selection of important companies reveals the following:

- The canned tuna supply chain is well developed and consolidated, although there are also large companies with a strong focus on either fishing or processing activities. As a result of the consolidation there appears to be a continuous interest in optimising the supply chain. In recent years several companies included in this study have either sold stakes to competitors or have bought into a company where there are opportunities to grow and expand into new markets.
- The supply chain for cultured shrimp is less developed and segmented. This is especially the case on the farming level. However, vertical integration and consolidation are a growing trend. This is especially the case since processors that trade Pacific White Shrimp increasingly start their own farms in order to secure raw material to supply to their factories. However, compared to the other supply chains, smallholder farms still play an important role in the cultured shrimp supply chain.
- The soy and beef supply chain is well developed and consolidated and increasingly dominated by a handful of multinationals. In order to access differentiated markets some companies are displaying an increasing degree of vertical integration with a small number of large companies dominating the supply chain.
- The food retail sector in the US is highly competitive and consolidated. The EU and Chinese food retail sectors are highly competitive but segmented. In the EU consolidation occurs at the member-state level while in China segmentation is the result of geography, infrastructure and culture, with international retailers struggling to gain a foothold. In all three markets food retailers are having to respond to changing consumer preferences in terms of both convenience and quality.

4.3 Financial composition of supply chain

When analysing how and by whom the three supply chains and the retail sector are financed, a number of trends and developments emerge that apply to the entire global financial system, including the supply chains that are the focus of this research. The most important of these trends is the growing importance of passively managed funds. A large portion of the shares of listed companies included in this research are held by the large providers of ETFs and index funds. Through their design, these funds are longterm shareholders of companies that are unable to divest from them. At the same time, the providers of these funds tend to engage less on sustainability issues compared to active investors. Furthermore, a number of companies in this research are owned by private equity or majority held by the founding family or management, while there are also a number of companies that are heavily debt financed. As explained in the text boxes throughout Chapter 3, all these characteristics impact the opportunities to engage with these companies.

There are clear differences in the financial composition of the supply chains for canned tuna, shrimp, soy & beef and retail. In the canned tuna and shrimp supply chains a few financial companies, who are amongst the largest providers of ETFs and other passively managed funds in the world, have financial ties to the most companies. In the supply chains for soy and beef the influence of retail banks is more significant. While retail banks are more likely to have developed sustainability policies and might be more prone to engage companies on sustainability issues, the nature of their financing, which occurs largely through syndicated loans, changes the dynamics of their advantage. As most retailers included in this research are large, listed companies, the same financial institutions are prevalent as have been identified in the other supply chains. The analysis of the financing of the retail sector furthermore shows that the type of financier is related to the category of financing. Shares are predominantly held by the large providers of passive investment vehicles, while bonds are more held by insurance companies. Syndicated loans are issued by commercial retail banks.

4.4 Recommendations

Based on the outcomes of this study, the authors make the following recommendations.

Ensure a solid, factual basis for constructive engagement
As highlighted by each of the experts interviewed as part of this research, the success of any engagement effort by responsible investors depends on the content of the investor's message and the quality of the supporting evidence. Any company profiled in this report will be more open to constructive engagement when there is a solid basis for the argument. This argument should not only convince companies that natural resource depletion is an urgent environmental and societal issue, but should also be presented as a risk to the long term business case and that the future profitability and financial stability of the company is dependent on effectively addressing this issue. Whereas the outcomes of this study provide valuable information about entry points for such efforts by looking at the ownership, capital structures and financiers of each of these companies, the factual basis of this engagement is a key prerequisite for successful engagement.

Identify and engage with likeminded investors
Multinational companies will have access to a diversified group of financiers, and will rarely be dependent on one single investor. Investors that hold shares in a company through the stock market will rarely obtain more than single digit percentages of the company. Although the financial value of such holdings might be significant, the leverage that one investor can have over the strategic choices of a company remains limited, and more engagement can be more fruitful when likeminded investors and other stakeholders team up. An engagement effort supported by a large group of investors that jointly hold shares in the company can have significant clout with a company's management.

The most widely used platform used by responsible investors is the United Nations Principles for Responsible Investment initiative (PRI). The PRI functions as a platform where responsible investors come together, share information and jointly develop strategies for shareholder engagement. Usually, one investor will take the lead in an engagement process and invites other investors to sign onto their message. Passive investors, which this research has shown are among the most important sources of finance for the four supply chains and the retail sector, are increasingly joining the PRI. Although the interviewed experts differed on the extent to which they believe passive investors are serious about engaging on sustainability issues, all agreed that the PRI would be the most logical starting point.

Select market leaders for spill over effects
Focus on those companies that have a large market share and leading role in supply chains. This can lead to improvements in the company itself as well as example-setting for peers.
As several of the interviewed experts indicated, highlighting best practice examples are a useful tool for engaging with companies that lag behind. In particular, when successful engagement with a market leader leads to significant improvements, this can lead to a situation where its competitors also see the need to improve their performance. Therefore, such companies might become trend-setters and when others follow, will ultimately provide the most 'bang for your buck'.

Tone should fit the ownership and capital structure of a company

While the ownership and capital structure of a company should not be the sole criterion for selecting companies for engagement, it is important to have a solid understanding of these structures. As described in Chapter 3, companies with a majority owner will be more open to collaborative messages, which can be function as a form of free consulting. A company with a high debt ratio might be more impacted by sustainability demands coming from bondholders. As their financing structure might exclude them from investments by risk-averse institutional investors, improving their sustainability performance can make them more attractive to other investors. This provides entry points for effective engagement by bondholders, for example through the design of green bonds or other forms of innovative financing.

Conduct additional analysis

The scope of this study focused on the supply chains and their financial composition in a general sense. Further research on the supply chains would reveal more specific information about specific market shares within different segments of the supply chains as well as on opportunities for constructive engagement with financial institutions. The company examples of financial leverage in Section 3.3 could serve as a point of departure for a more detailed analysis at the company level.

For example, this study concludes that opportunities for financial leverage exist in the soy and beef supply chain because of their links with commercial banks. However, additional research would be needed to find out if these banks are truly willing to take into account social and environmental issues. This research should assess the quality of sustainability policies of the relevant financial institutions and the extent to which these policies are implemented on an operational level, for example when designing syndicated loan facilities. Further analysis of the banking services provided by retail companies and the impact of this development on the overall financing of this sector is another example of an identified trend that could merit further analysis.

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