



European
Commission



CASE STUDY

SMOKED SALMON IN FRANCE



PRICE STRUCTURE IN THE SUPPLY CHAIN

E U M O F A
European Market Observatory for
Fisheries and Aquaculture Products

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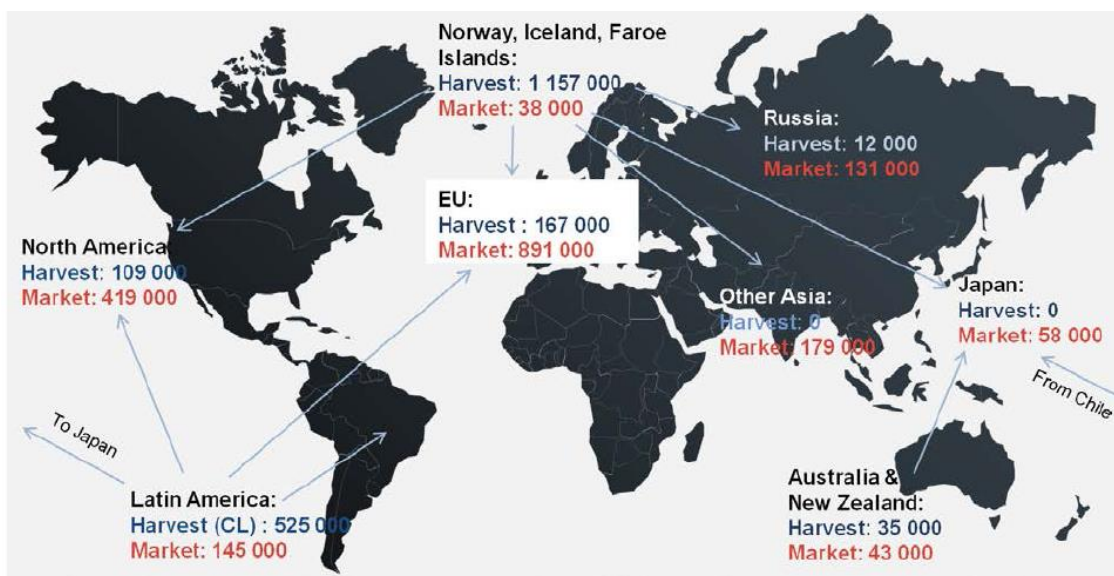
Summary

- The overall worldwide supply of fresh Atlantic salmon is insufficient compared to the demand from 2010 onwards (drop in Chilean production), pushing prices up. Substitutions by Pacific salmons or trout do not fill the gap.
- The increase in fresh salmon prices since 2013 combined with campaigns pointing out controversial rearing conditions in Norway caused important perturbations both in the market (decrease in consumer demand) and the industry (business failure and restructuring) in France and more widely in the EU.
- The EU smoked salmon processing industry covers the needs of the EU market, estimated at 155.000 tonnes and exports some 9.000 tonnes to third countries.
- Although having ex-factory prices inferior by 30-35% to those of French processors, Polish companies faced a decrease in their exports to France. After a rapid growth of Polish exports to France (13% from 2009 to 2013), for the first time they decreased by 22% in 2014. Coordinated strategies of French processors for developing new products, promoting quality (dry salted, never frozen) and sourcing from sustainable production systems (organic, wild salmon from well managed fisheries, GlobalGap certified aquaculture...) have proven successful.
- Cost structure and price transmission along the French value chain changed significantly between 2009 and 2013. The increase in fresh salmon price (+ 36%) was not fully passed on to ex-factory prices (+34%) and negatively impacted the operating margins of processors that only grew by + 31% in value. Retailers appear to have amortized most of the effects of the increase in aquaculture and processing prices, containing the retail price increase to only + 13%. The average gross margin of retailers dropped from 38,2% in 2009 to 18,7% in 2013.
- The price elasticity of demand reached a breaking point in 2013 when smoked-salmon price exceeded 25 EUR, causing drops both in purchase frequency and proportion of purchasing households.
- Trends observed in the French market in the recent period show that price is not the only, even not the main, component of competitiveness. French processors have regained some market shares through differentiation strategies and the promotion of “superior” smoked salmon. The overall consumption of smoked salmon decreased from 2013 onwards, as the result of the increase of retail prices. It does affect more low-range products than “superior”, and expensive, products.

0 TASK REMINDER – Scope and content

0.1 Scope of the case study

- The study focuses on the most important market: i.e. France, which means that analysis are developed in the most possible detailed way only for this country;
- An overview of available information and preliminary analysis is proposed for the other relevant markets and a specific focus is made on Poland, which has become the main EU smoked salmon producer in a few years.
- The EU market for salmon was estimated 891 000 tonnes GWE¹ in 2014, of which about 785,000 tonnes were used by the processing industry (source Marine Harvest).

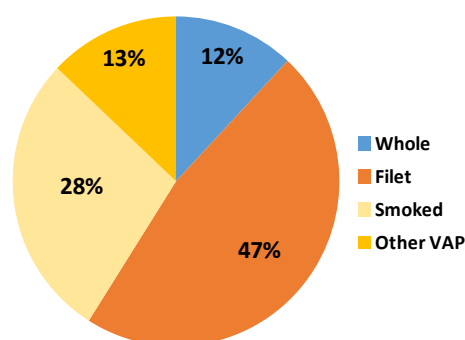


- Historically the main markets for each production origin are relatively disconnected:
 - Norway supplies EU, Russia and Asia;
 - Scotland supplies mainly UK market and limited export to EU
 - Chile supplies USA, South America and Asia;
 - Canada supplies USA (west coast)

Each production focuses on the nearby markets, due to the fact that salmon is primarily marketed as a fresh product and that time and cost of transportation are key factors. Smoked salmon is consumed all over the world, but transcontinental exchanges are limited

- Of the different salmon products, smoked salmon ranked at the second place on the EU market (28%), far behind fillets (47%). The EU market for smoked salmon was estimated to 175,000 tonnes product weight in 2014, representing 280,000 tonnes GWE of raw material (fresh salmon), up 21% since 2009.

EU market supply in salmon products



¹ GWE: Gutted Weight Equivalent

Products	Origin	Characteristics	Market and price drivers
Smoked Atlantic salmon and substitutes (Trout and Pacific salmon)	Most of the raw material is imported from Norway (2/3) + EU production (1/3: UK, Ireland)	Processed product: especially EU (PL, FR, UK)	Innovation is a key driver (process innovation in aquaculture and product-market innovation of smoking companies) Intra-EU market and competition (development of processing capacities in Poland and Lithuania) Currency rates (EUR/NOK, EUR/GBP)

The analysis concentrates on:

- The influence of international supply-demand balance for fresh salmon on price of raw material used by the EU smoking industry;
- The effects of currency rates, considering that salmon is farmed outside the Euro zone;
- The effects of relocation of the German smoking industry in Poland on competitiveness of the national industries and on price of smoked products;
- Relation between actors of the supply chains and distribution of value, considering that the salmon farming sector, the salmon smoking industry and the retailing sector are highly concentrated in France;
- Dynamics of the market and effects of innovation and segmentation on average price of smoked salmon products.

0.2 State and content of the document

The methodology used for developing case studies on price transmission in EU fisheries and aquaculture products supply chains involves two main complementary tasks:

- First, gathering the maximum of available data and statistics and developing specific investigations (such as group analysis for establishing economic performance of key actors of the supply chains);
- Second, conducting interviews with experts and stakeholders (smoked-salmon producers, retailers, suppliers), to get qualitative comments on data produced in task 1, and for collecting complementary information on standard costs and margins.

1 DESCRIPTION OF THE PRODUCT(S) AND MARKET(S)

1.1 Salmon(s) and smoked salmon products

1.1.1 Name, presentation, place in the nomenclature

The case study focuses on smoked Atlantic salmon products (fillets, slices, other cuts), which are the main produced and consumed in the EU among smoked salmonids products.

- **Main product**

Name: Atlantic salmon (*Salmo salar*)

Farmed Atlantic salmon is the main raw material processed by EU smoking industry.



© Scandinavian Fishing Year Book

Presentation: quite exclusively whole fish, gutted, head-on, fresh or refrigerated. Size: 3 – 6 kg. Filletting is realized by smoking companies for sanitary reasons. Small quantities of frozen Atlantic salmon are used by industrial smokers.

- **Substitutes**

Main substitutes to smoked Atlantic salmon are two other groups of smoked salmonids:

- Farmed rainbow trout (*Onchorynchus mikiss*), in large sizes;
- Farmed or wild Pacific salmon (*Onchorynchus* spp.), principally sockeye and coho.

On the French market, smoked salmon is also in the same basket with other cured and smoked meats (cured or cooked ham) all along the year, and with festive meals in the Christmas and New Year period, such as oysters or “foie gras”.

Related codes in the product nomenclature.

Atlantic and Pacific salmon are now differentiated in the COMEXT nomenclature since 2012 but not in the PRODCOM nomenclature. Origins may nevertheless allow distinguishing the two groups of species.

Raw material:

- Salmon, fresh or refrigerated - whole – COMEXT : 03021200 until 2011
- Pacific salmon, fresh or refrigerated - whole – COMEXT : 03021300 since 2012
- Atlantic salmon and Danube salmon, fresh or refrigerated - whole – COMEXT : 03021400 since 2012
- Pacific, Atlantic and Danube salmon , fresh or refrigerated – fillets – COMEXT : 03044100

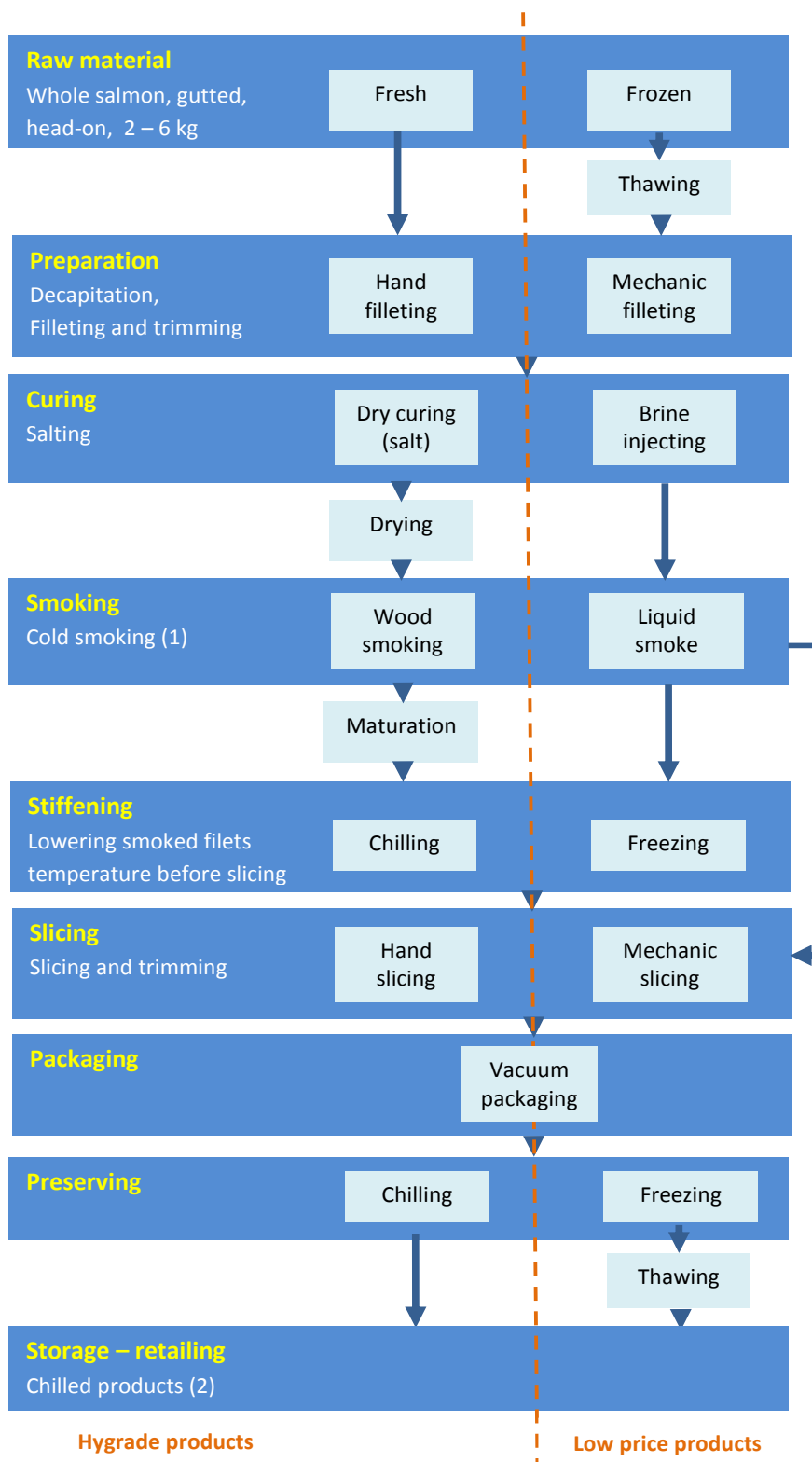
Final products:

- Smoked Pacific, Atlantic and Danube salmon (including fillets) - COMEXT: 03054100; PRODCOM : 10202420 until 2011, 10202425 since 2012.

1.1.2 Smoked salmon-processing steps

Smoked-salmon products are obtained by two main techniques: hot smoking traditionally used in Northern America and cold-smoking, the most widely used technique in the EU. Processing steps in cold-smoking may vary with traditions and quality objective of smokers (Figure next page).

Figure 1 - Processing steps in cold-smoking salmon production



Sources: Elaboration from technical documents of smoking companies, IFREMER and interview of the French professional organization (STF: Syndicat des Transformateurs de Saumon).
 (1) There is very few hot-smoked salmon on the French market
 (2) Most of smoked salmon consumed in France is chilled.

Key analysis:

- Traditional techniques, using dry curing and wood chips smoking have been progressively replaced by industrial approaches, reducing processing times, labour costs and material loss... allowing to satisfy the demand for mid-range (retailers brands) and low cost products;
- The processing industry has developed a wide range of smoked salmon products and innovation

Effects on price:

- The different processing techniques induce different yields on raw material (injection of brine in fillets allow them absorbing up to + 8% of water when dry curing leads to a loss of about -2% of the weight of the fish) and different production costs. Prices of smoked-salmon products may consequently vary significantly.

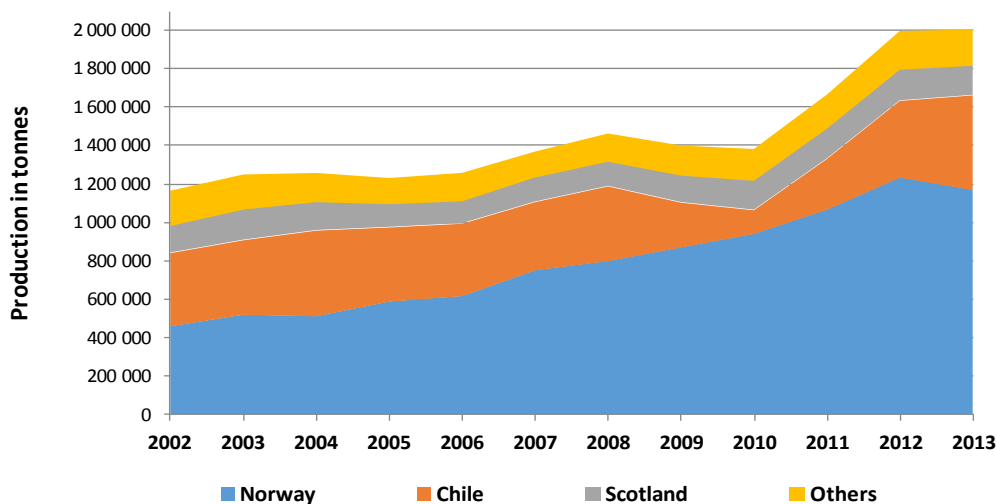
1.1.3 Production and availability of Atlantic salmon

Aquaculture is by far the main supplier of the EU market in Atlantic salmon. Some tonnes of wild Atlantic salmon are landed in the Baltic area, but do not supply the smoking industry.

Key analysis:

- After a drop under 1,4 million tonnes in 2010, due to dramatic effects of a salmon disease in Chile, the world production of farmed Atlantic salmon raised up to 2 million tonnes in 2013;
- Norway’s market share grows up to a maximum 68% of the world supply in 2010. It is by far the main supplier of the EU salmon smoking industry.

Chart 1 - World production of farmed Atlantic salmon (tonnes)



	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Norway	460 000	520 000	512 000	588 444	617 000	751 000	799 000	870 000	940 440	1 065 878	1 233 052	1 168 995
Chile	380 647	387 529	445 757	385 779	376 476	355 000	388 847	233 308	123 233	264 349	399 678	492 329
Scotland	142 961	161 748	150 000	123 000	118 525	129 930	129 545	142 283	154 800	158 544	162 888	154 458
Others	183 683	182 259	151 775	135 910	148 040	134 689	147 095	156 353	165 283	177 264	200 879	188 803
Total	1 167 291	1 251 536	1 259 532	1 233 133	1 260 041	1 370 619	1 464 487	1 401 944	1 383 756	1 666 035	1 996 497	2 004 585
% Norway	39%	42%	41%	48%	49%	55%	55%	62%	68%	64%	62%	58%

Sources: 2002 to 2009 - EUROSTAT data, available in EUMOFA module 3 dataset
2010 to 2013 FAO (links with websites available in EUMOFA).

Effects on salmon price:

- The worldwide demand for Atlantic salmon continued to increase in the recent years, boosted by the development of sushi markets, while production leveled off as of 2012;
- The salmon market is extremely tight and any drop in production pushes prices higher. It was the case in 2009-2010, when Chile reduced its supply, due to sanitary crisis, and in 2013 when Norway's production decreased;
- The smoking industry is in competition with fresh salmon markets for the provision of its raw materials and is directly affected by changes in the supply-demand balance.

2 THE EU MARKETS FOR SMOKED SALMON

2.1 Structure of the EU markets

2.1.1 Apparent market by Member State

The EU market for smoked salmon products was estimated at 155 600 tonnes in 2013, an increase by 29% compared to 2010. Germany is the largest market, followed by France which was the first market until 2010. Together, the two countries account for 49% of the EU market in volume (58% in 2010).

Table 1 - The EU market for smoked salmon in 2013 (volume in tonnes)

Member States	Production	Import	Export	Apparent market	% of market
EU 28	163 800	732	8 892	155 639	100%
Germany	14 818	39 111	10 411	43 518	28,0%
France	28 259	8 696	4 368	32 587	20,9%
United Kingdom	16 716	2131	4 724	14 123	9,1%
Italy	1 149	12 418	107	13 460	8,6%
Spain	10 184	1 097	559	10 723	6,9%
Poland	55 067	984	45 469	10 581	6,8%
Belgium	2 903	6 060	1 308	7 655	4,9%
Denmark	13 368	2 311	9 692	5 987	3,8%
Netherlands	3 000*	2 705	3 325	2 380	1,5%
Finland	1 830	308	37	2 101	1,3%
Austria	0	2 314	516	1 798	1,2%
Lithuania	13 122	45	11 469	1 698	1,1%
Others				7585	0,9%

* Estimate

Sources: STF (Syndicat des Transformateurs de Saumon) in ADEPALE annual statistic yearbook 2014.

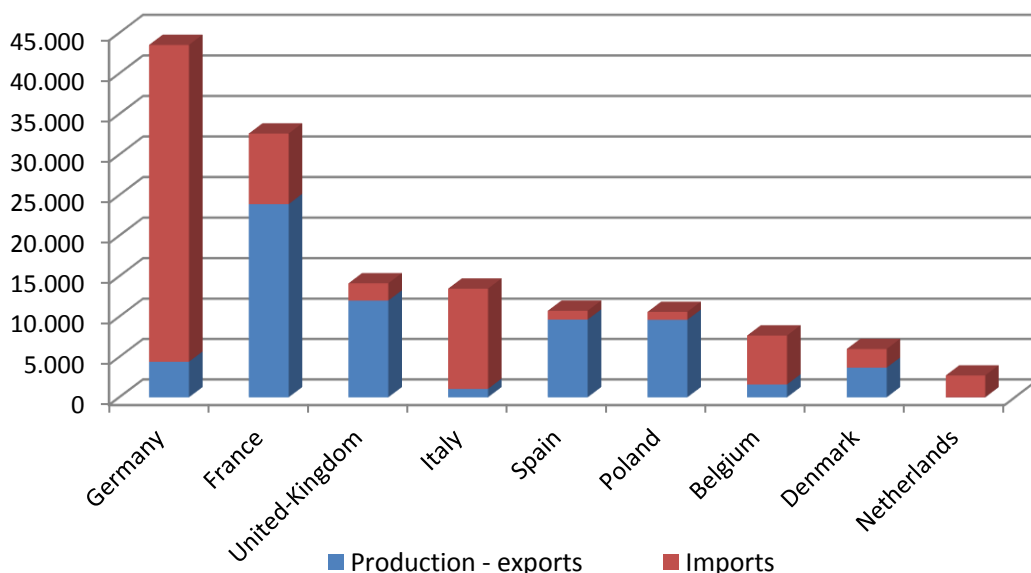
Alternative sources: PRODCOM – 10202420 and 10202425 since 2012 (production of smoked salmon and trout) and COMEXT – 0305410 until 2011; 03021300 and 03021400 since 2012 (import and export of smoked salmon) available in EUMOFA.

Apparent domestic market for each Member State is calculated as follows: production – exports + imports

2.1.2 Apparent consumption of Smoked-Salmon in the main EU market

The patterns of market supply are radically different between the two main EU markets: Germany and France. French smoking industry contributes 73,3% to the domestic demand, while Germany relies primarily on imported products for 90% (the German smoking industry collapsed during the last decade, while Polish smoking industry strongly developed its processing capacities and exports to other EU member states).

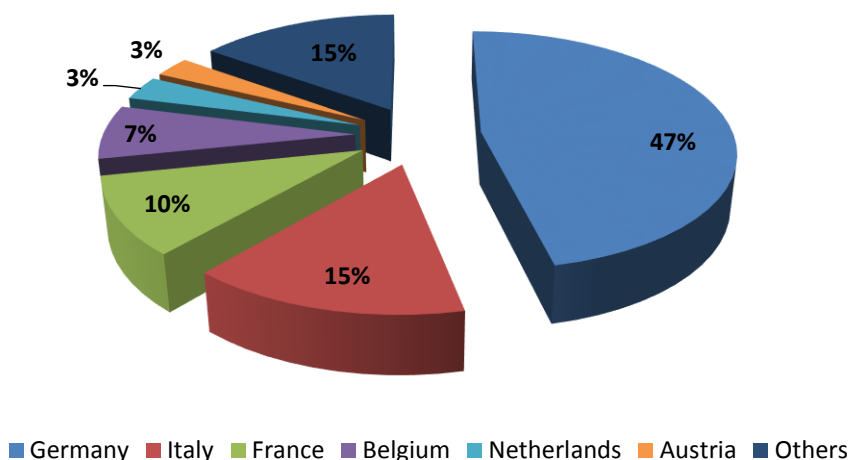
Chart 2 - Supply of the main European markets in 2013 (volume in tonnes)



Source: STF - ADEPALE annual statistic yearbook 2013

Germany, Italy and France are the three main importers within the EU, with 73% of the total volume.

Chart 3 - Main European importers for smoked-salmon products (2013)

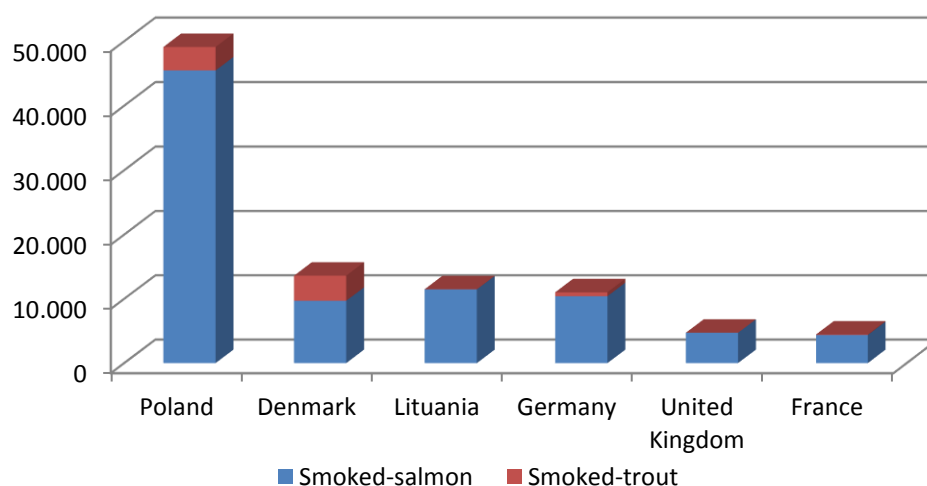


Source: Elaboration from COMEXT – EU import data (codes 03021300 and 03021400) available in EUMOFA

2.1.3 Main exporting countries within the EU

The Polish processing industry plays a major role in supplying Western and Central Europe with smoked fish (mainly smoked salmon and trout). Important investments in the smoking industry during the last decade (supported by FIFG and EFF funds) has led Poland to lead in the EU production and export of smoked salmon and trout with 49 000 t in 2013 (+40% compared to 2010). Denmark is the main exporter of smoked trout and Lithuania ranks at the second place for smoked salmon exports

Chart 4 - The main European exporters of smoked salmonids in 2013 (volume in tonnes)



Source: Elaboration from COMEXT – Export of smoked salmon (code 0305410) and smoked trout (03054945)

Effects on price: The development of important new capacities in Poland and Lithuania during the last decade changed the terms of competition with other EU processors. Polish and Lithuanian smokers produce mostly entry level and mid-range products (retailer's brands). They target now France where the two leading Polish companies (Morpol and Suempol) have built and/or purchased processing facilities, which operate at French costs.

2.2 The French market

2.2.1 The market for smoked salmon and smoked trout

The French market for smoked salmonids (salmon and trout) was estimated at 37 300 tonnes in 2014, in slight decrease compared to 2013. Smoked trout is a strong growing segment which represented 10% of the sales in volume in 2014.

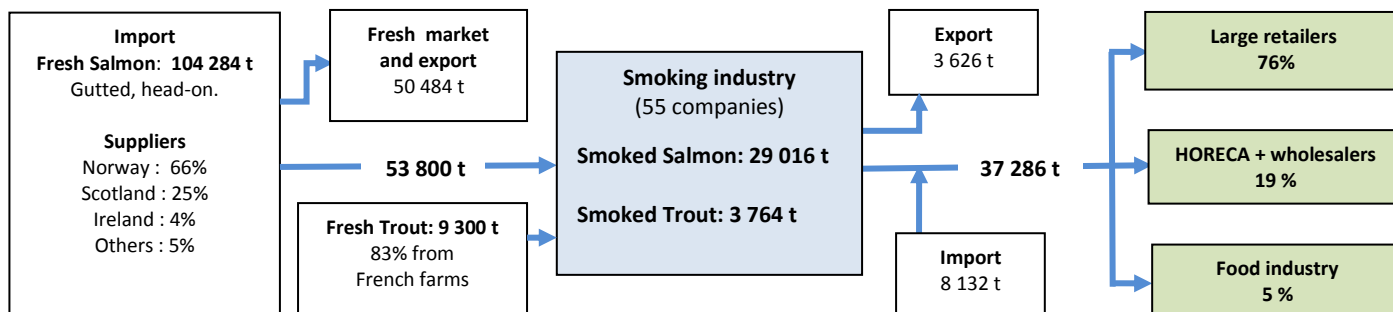
Table 2 - Apparent consumption of smoked salmon and trout in France (volume)

(Tonnes)	Smoked salmon	Smoked trout	Salmon + trout
Production	29 016	3 764	32 780
Import	7 824	308	8 132
Export	3 330	296	3 626
Apparent consumption 2014	33 510	3 776	37 286
<i>Apparent consumption 2013</i>	<i>34 471</i>	<i>3 521</i>	<i>37 999</i>
<i>Evolution 2014/2013</i>	<i>-2,79%</i>	<i>+7,25%</i>	<i>-1,88%</i>

Sources: STF - ADEPALE annual statistic yearbook 2014

2.2.2 Structure of the supply chain

The French smoking industry is composed by 55 specialized companies, of which 6 realize more than 80% of the overall turnover.

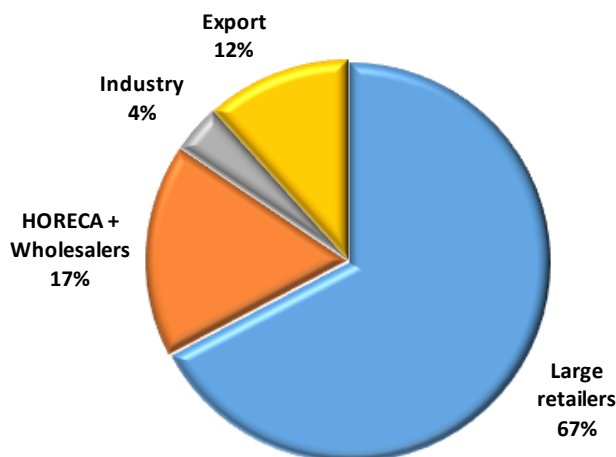


Sources:

French import and export of fresh and smoked salmon by origin: EUMOFA
 Fresh trout production, production of smoked salmon and trout, marketing channels: STF- ADEPALE (statistic yearbook 2014). Number of smoking companies: DCF – From FranceAgriMer

Chart 5 - Breakdown of sales of French smoked salmon producers (volume in tonnes)

Products	Sales (tons)
Smoked salmon	
Large retailers	19 149
HORECA + Wholesalers	4 886
Food industry	1 114
Export	3 330
Total smoked salmon	28 465



Source: STF - ADEPALE annual statistic yearbook 2014.

Key analyses:

- Large retailers sell more than two third of the volumes produced by French processors. They develop retailer’s brands and low-price products;
- Imports rose to 8 000 t in 2013, Poland supplying 72% of the volume. A downturn was observed in 2014, with an overall drop of -11% in French imports and of -22% for products from Poland.
- The French market is segmented between processor’s brands, mostly for high-end products, and retailers brands, mostly oriented on entry-level and middle-end products.

Effects on price:

- The low-price strategies of large retailers have opened the market for low-end and retailer’s brands to low-cost suppliers (Polish, Lithuania);

- French salmon smokers have developed innovative strategies to maintain markets share and limit the development of retailer’s brands and low-end products.

2.2.3 Segmentation of the market

The French market for smoked salmon is segmented on three main criteria:

- The geographical origin of salmon: Norway, Scotland, Ireland...Alaska for wild pacific salmon ;
- Retailer’s and processor’s brands
- The quality of the raw material: wild/farmed salmon, organic salmon, Label Rouge....

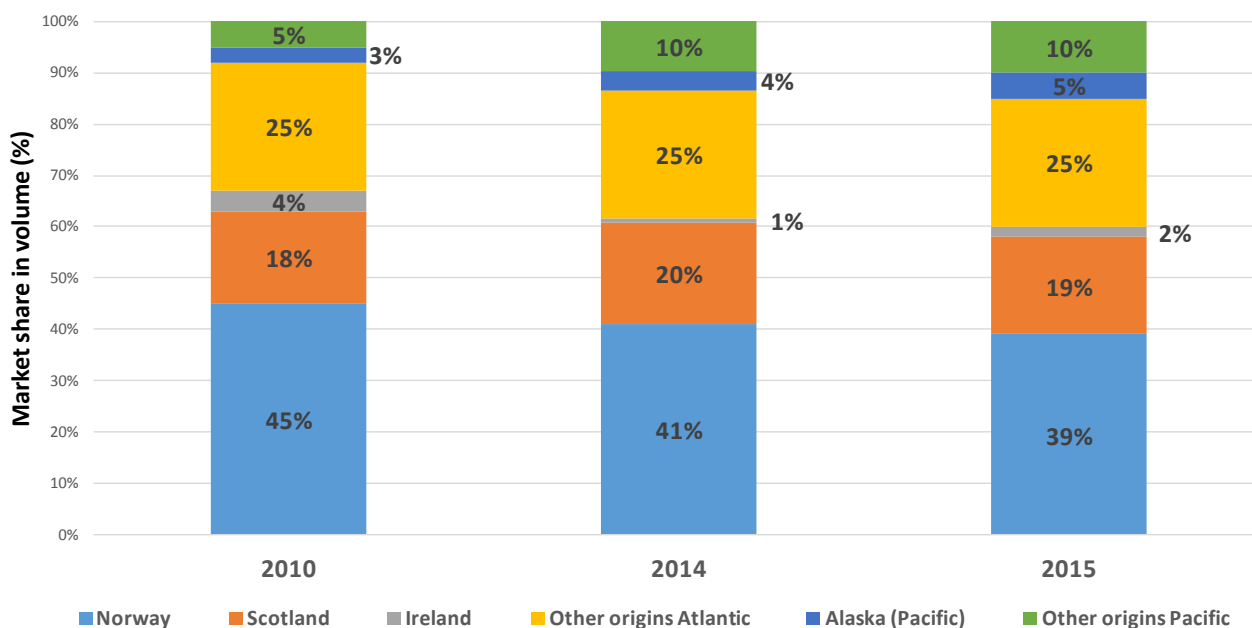
Smoked trout has become a specific and significant market segment in the recent years, boosted by its qualitative advantages (low fat, organic, size...). Smoked trout represented 3 400 tonnes (+63% compared to 2009) and 101 million Euros in 2014.

- Segmentation by origin

Smoked Atlantic salmon represented 95% of the volume sold by French supermarkets in 2015. The market share of smoked Pacific salmon decreased by 3 points from 2010 to 2015.

- Norway remains the reference but faced a loss of 6 points of market share on the last five years, which benefit partly to Scotland ;
- Other origins (Faroe ...) gained 10 points on the same period.

Chart 6 - Segmentation of the market by origin in French supermarkets (volume)



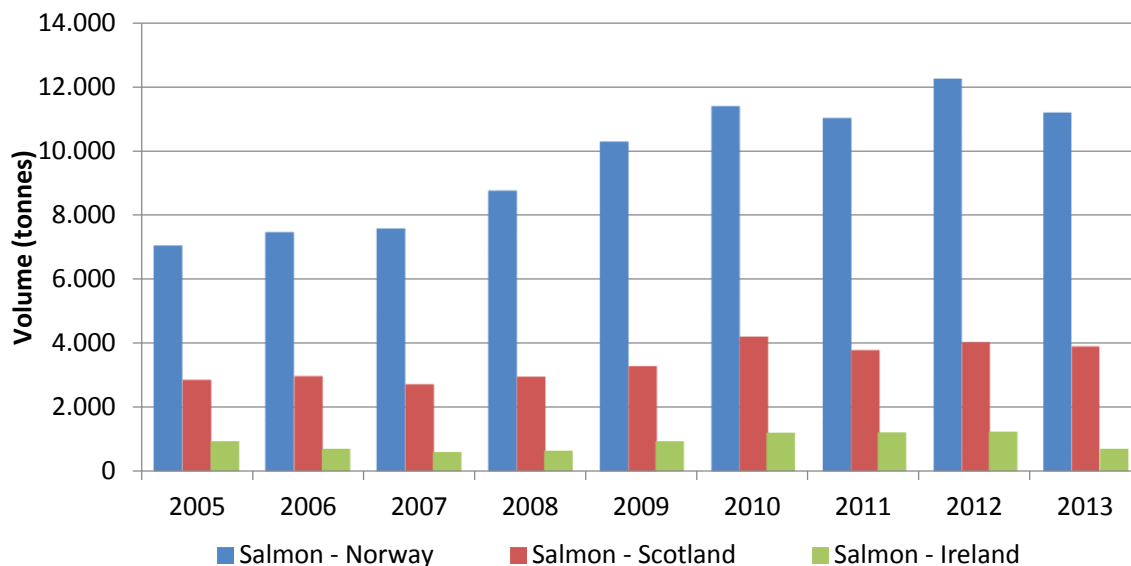
Source: Retailer panel (Nielsen), in French professional press (Produits de la Mer, Linéaires).

French consumers’ choice in 2013 affected negatively the market share of Norway origin, due to:

- First, the marketing investments of French processors in favour of innovation and promotion of high-grade products mentioning the origins of raw material;
- Second, the large price increase at retail level (see chapter 3.3);

- Third, the effects of communication campaigns in 2013 pointing out controversial rearing conditions in Norwegian farms (low quality of feed, use of pesticides....);

Chart 7 - Segmentation of the market of smoked atlantic salmon by main origin (tonnes)



Source: Elaboration from Kantar Panel for FranceAgriMer, available in EUMOFA

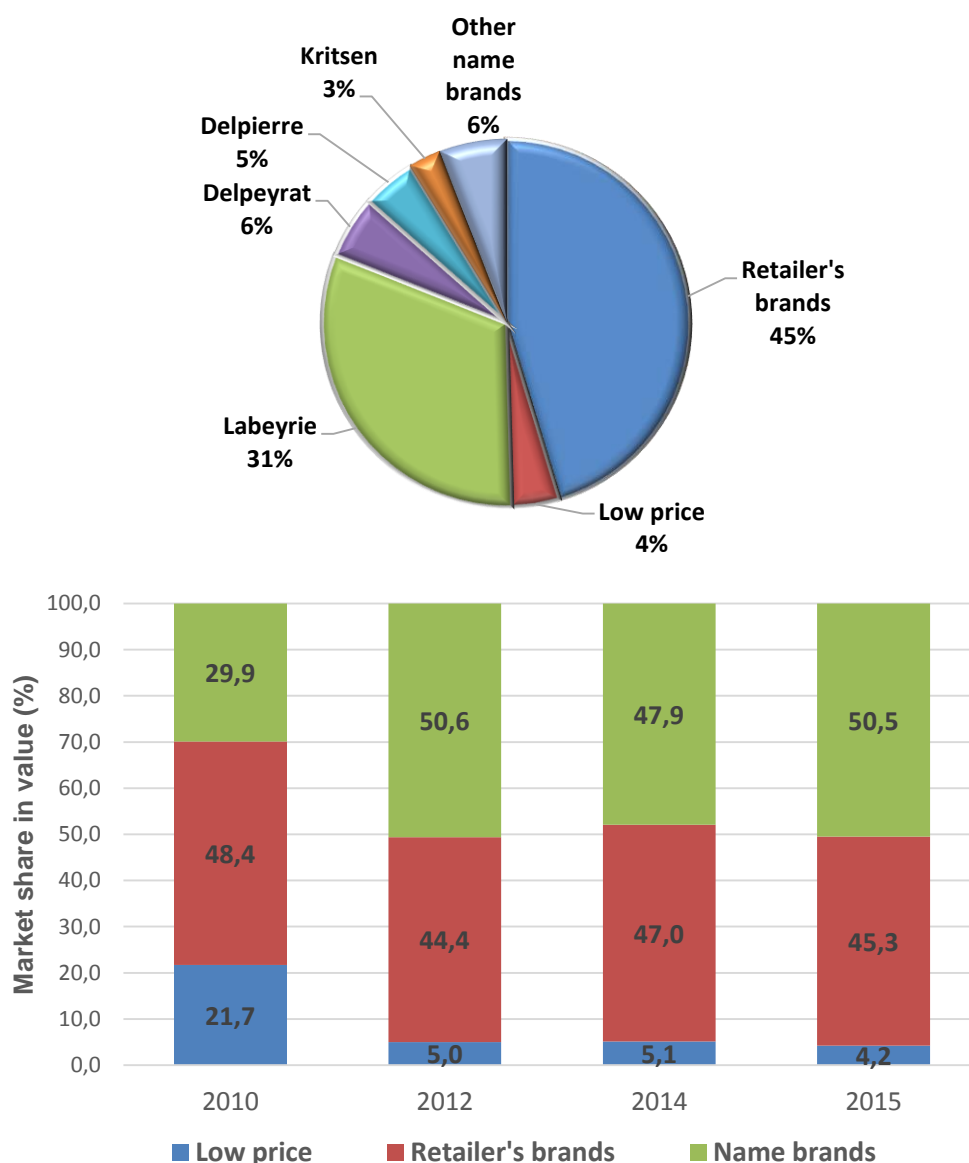
- Segmentation by labels / brands

From 2000 to 2010, the market for smoked salmon registered a sharp reduction of the share of brands, 68% to 30% in volume, and the symmetric progression of retailers' brands and low-end / low-price products (sometimes with no specific brand).

However, from 2010 French processing companies developed successful marketing strategies for the differentiation and promotion of their brands which led to an inversion of the trend in 2015. The share of name brands in value crossed again the 50% mark.

A restructuring of the French smoking industry occurred in 2012-2013 following the increase of fresh salmon price and the consequent reduction in the profitability of smoking firms. This led to firm failures, restructuring and concentration in the sector, favouring the emergence of three strong leaders - Labeyrie and Delpyrat, two French leaders in "foie gras" and fine foods, and Marine harvest Kritsen-Morpol – having a higher bargaining power with large retailers.

Chart 8 - Segmentation of the market by brand in French supermarkets (in value, 2015)



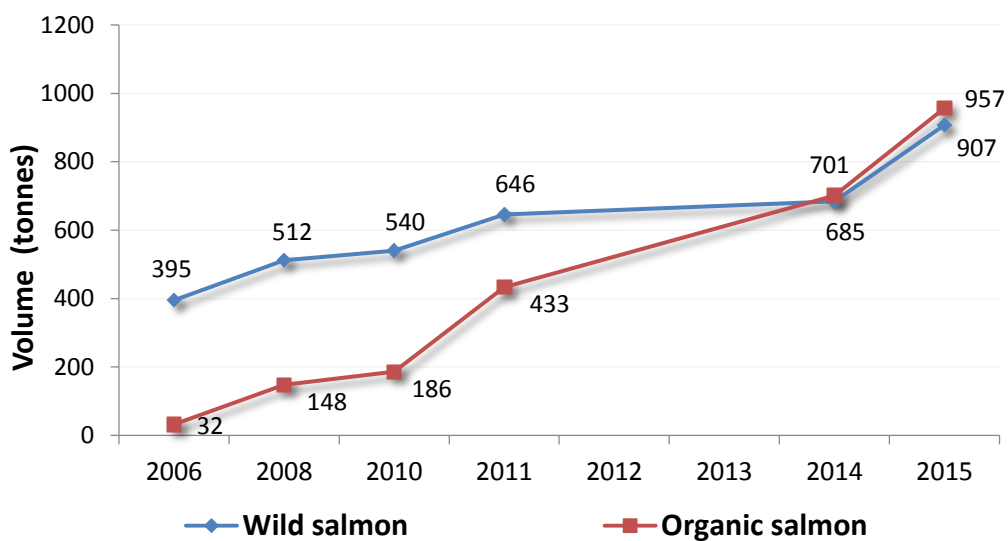
Source: Retailer panel (Nielsen), in French seafood press (Produits de la Mer, Linéaires).

Since 2015 name brands proposing more qualitative and/or certified products (label Rouge, Organic..) reversed the downward trends and recovered some of the market shares lost in previous years. This impacted negatively mainly low-end products imported from Poland.

- Trends in quality segments

Even though representing a minor part of the market (<10%), “high quality” products (wild salmon, organic salmon and trout...) attracted new consumers and grew significantly (volume multiplied by 2.5 between 2010 and 2015), despite higher prices.

Chart 9 - Segmentation of the market for smoked salmon in French supermarkets (volume)



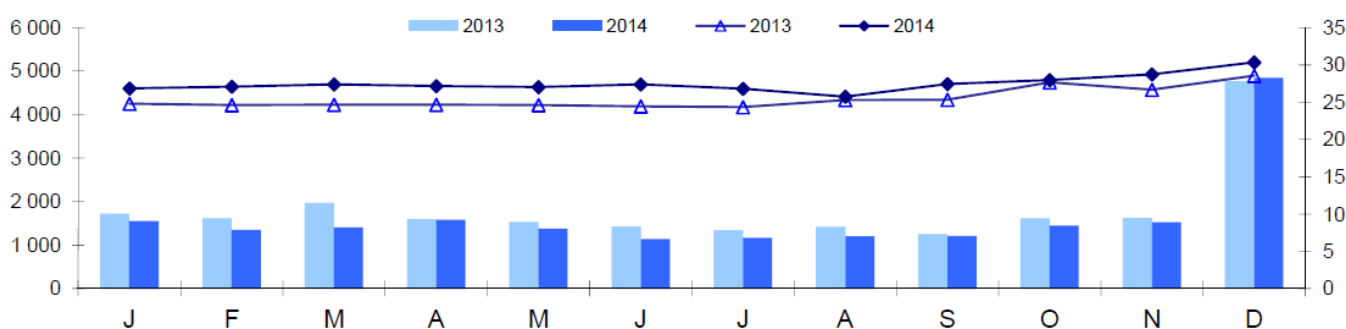
Source: Retailer panel (Nielsen), in French seafood press (Produits de la Mer, Linéaires).

2.2.4 Seasonality of consumption

One key characteristic of the French market for smoked-salmonids is that around 30% of the annual sales are concentrated in December. During the Christmas and New Year period, smoked salmon is considered as a traditional festive meal, while it is consumed quite as a convenience food the rest of the year.

Chart 10 - Seasonal patterns of smoked-salmon consumption in France

(scales: right – volume in tonnes, left - price in EUR/kg)



Source: Kantar Panel for FranceAgriMer

2.3 Key market drivers

Analysis of recent market trend shows that the main drivers are:

- Competition between retailers (retailers brands and low-price) and processors (name brands). The power balance has been significantly modified with the recent restructuring of the French and EU salmon smoking industry ;
- Competition between entry-level and high-end products, substitution and price elasticity of demand in a context of increase in raw material price;
- The higher concern of French consumers towards quality and image of the different products.

3 PRICES DOWNSTREAM THE SUPPLY CHAIN

This chapter analyses available price data (from EUMOFA and other sources) and trends on prices at different levels of the smoked salmon supply chain in France, with the objective to set the framework for price transmission analysis (chapter 4).

3.1 Price of raw material

French salmon smoking companies rely quite exclusively on imported raw material (French aquaculture produces only 1 000 tonnes of Atlantic salmon). Most of the fish used by the smoking industry are imported from Norway, entering the EU through Sweden.

Apparent average price of whole fresh salmon is appreciated by the ratio value/volume imported.

Table 3 - Prices of imported fresh whole salmon in France

Salmon, fresh or refrigerated - whole (03021200 until 2011 - 03021300 and 03021400 since 2012)								
	2008	2009	2010	2011	2012	2013	2014	2015
IMPORT (value - EUR)	345 276 579	416 286 115	539 526 073	507 661 360	474 587 511	587 879 057	565 714 975	568 198 960
IMPORT (volume - tonnes)	91 214	107 129	111 100	109 281	116 602	110 977	104 284	107 837
IMPORT (price – EUR/kg)	3,79	3,89	4,86	4,65	4,07	5,30	5,42	5,27

Pacific Salmon, fresh or refrigerated - whole (03021300)				
	2012	2013	2014	2015
IMPORT (value - €)	92 291 525	91 810 847	9 578 257	8 053 456
IMPORT (volume - tonnes)	21 505	16 818	1 530	1 195
IMPORT (price – €/kg)	4,29	5,46	6,26	6,74

Atlantic Salmon, fresh or refrigerated - whole (03021400)				
	2012	2013	2014	2015
IMPORT (value - €)	382 295 986	496 068 210	556 136 718	560 145 504
IMPORT (volume - tonnes)	95 097	94 159	102 754	106 642
IMPORT (price – €/kg)	4,02	5,27	5,41	5,25

Source: Elaboration from COMEXT (import in volume and value). Average annual prices are calculated by dividing Value / volume. From 2012, Atlantic salmon and Pacific salmon (different species) are distinguished in COMEXT statistics.

The drop of the production in Chile (2009-2010) was responsible for the first worldwide unbalance between supply and demand. Chilean production remained fluctuant since then and in 2013 a new increase in price of fresh salmon occurred (+30% compared to 2012).

3.2 Ex-factory prices

Two sources are available in France to estimate, on a yearly basis, average ex-factory prices for smoked salmon (and trout):

- Data collected by the French professional organization of salmon smoking companies (STF-ADEPALE);
- PRODCOM statistics (code 10202420), collected partly by ADEPALE.

Table 4 - Ex factory prices of smoked salmonids in France (all types of presentation, salmon + trout)

	2006	2007	2008	2009	2010	2011	2012	2013	2014
PRODCOM (EUR/kg)	17,1	17	17,3	15,8	NA	18,7	17,8	20,6	21,8
ADEPALE (EUR/kg)	15,3	15,8	15,1	15,4	16,5	16,8	15,8	17,6	17,9

Source: Ex-factory prices from ADEPALE are calculated by dividing the value of annual sales of the industry by the volume of products.
 PRODCOM data (10202420 until 2011, 10202425 since 2012 -sales of smoked salmon and trout)

Considering that ADEPALE data on turnover and volumes may include other products than smoked salmon, the ex-factory price used in the following chapters is from PRODCOM, except for 2010 where ADEPALE data are used (no PRODCOM data available this year)..

3.3 Retail prices

Average annual retail prices for smoked-salmon and trout are monitored by FranceAgriMer through consumer panel. Smoked-salmon produced with raw materials from Norway is the mid-range reference, Ireland and Scotland being mostly marketed as high-grade products.

Chart 11 - Retail price of smoked Atlantic salmon and trout in France (EUR/kg incl VAT)

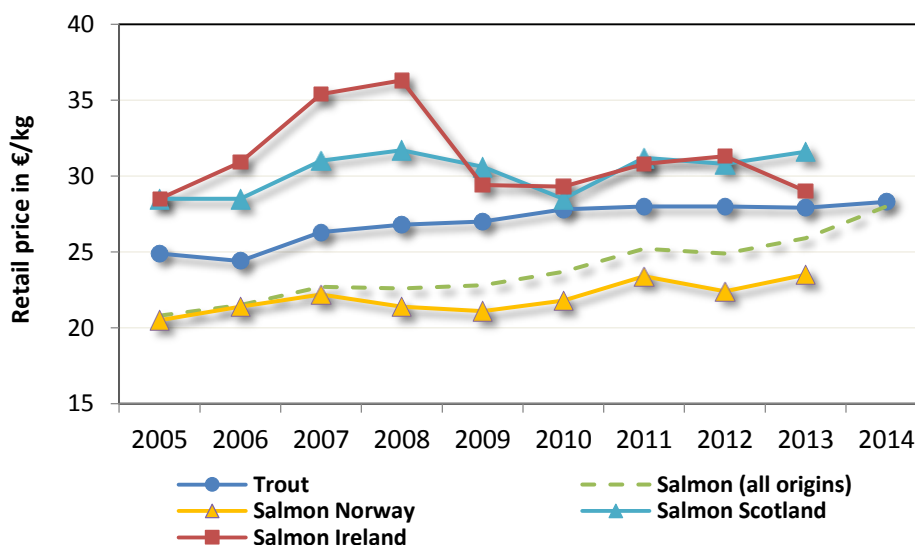


Table 5 – French retail prices of smoked Trout and Salmon by origin (in EUR, including VAT)

	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Trout	24,9	24,4	26,3	26,8	27	27,8	28	28	27,9	28,3
Salmon (all origins)	20,8	21,5	22,7	22,6	22,8	23,7	25,2	24,9	25,9	28
Salmon Norway	20,5	21,4	22,2	21,4	21,1	21,8	23,4	22,4	23,5	NA
Salmon Scotland	28,5	28,5	31	31,7	30,6	28,5	31,2	30,8	31,6	NA
Salmon Ireland	28,5	30,9	35,4	36,3	29,4	29,3	30,8	31,3	29	NA

Source: Elaborated from FranceAgriMer yearly handbook

Ex-factory prices concern average price of a various range of products (smokers generally process trout and salmon from different origins).

Therefore it is more relevant to use retail price for salmon and trout and to calculate an average price for smoked salmonids products (table 6).

Table 6 - Average retail prices of smoked Salmon and trout (in EUR, including VAT) in France

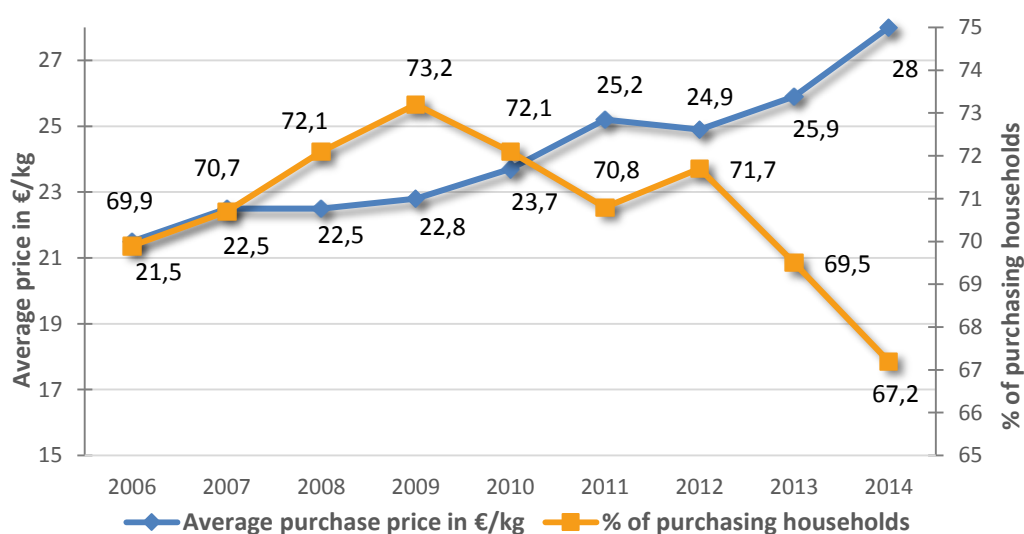
Value (€)	2006	2007	2008	2009	2010	2011	2012	2013	2014
Salmon + trout	21,8	23	22,9	23,1	24,1	25,5	25,2	26,1	28,0

Source: Kantar Panel – FranceAgriMer.

Salmon and trout data are aggregated considering that the smoking industry processes both species in France.

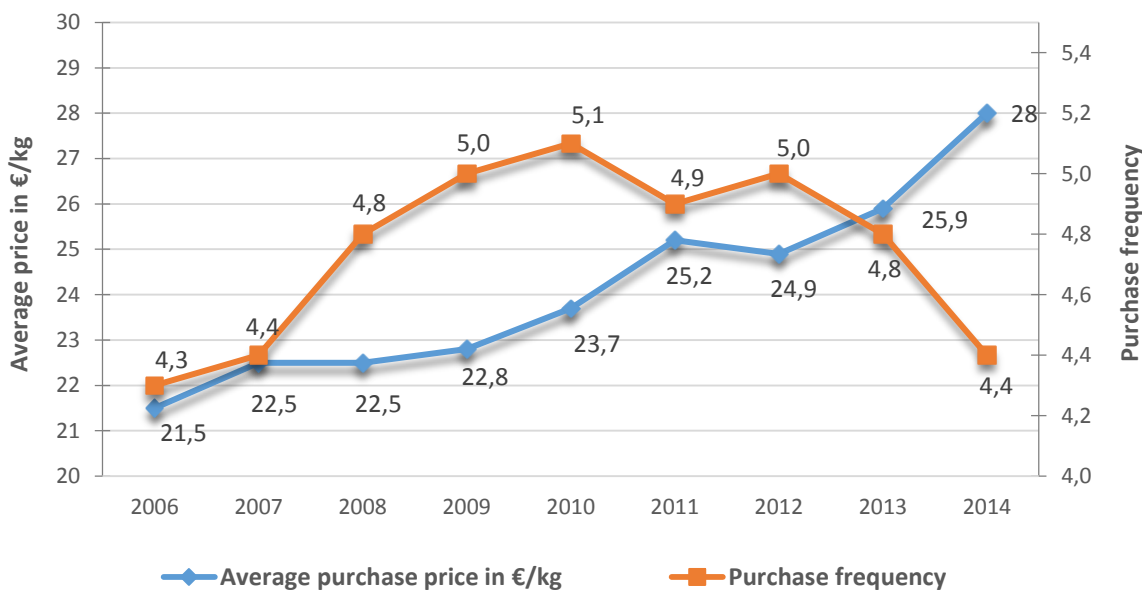
3.3.1 Price elasticity

FranceAgriMer-Kantar panel provides some indication on the relation between price and purchase level. Charts 12 and 13 show a break in French consumer's purchase behaviour when retail price of smoked salmon reached 25 EUR/kg.

Chart 12 - Relation between retail price of smoked salmon and % of purchasing households


The increase of 1 EUR/kg of retail price observed in 2013 (following the 30% increase of fresh whole salmon price) led to both a decrease in the share of purchasing households and in the purchase frequency. This trend accentuated in 2014 with a new increase in retail price of about 2 EUR/kg.

Chart 13 - Relation between price of smoked salmon and purchase frequency



Source: Elaborated from FranceAgriMer

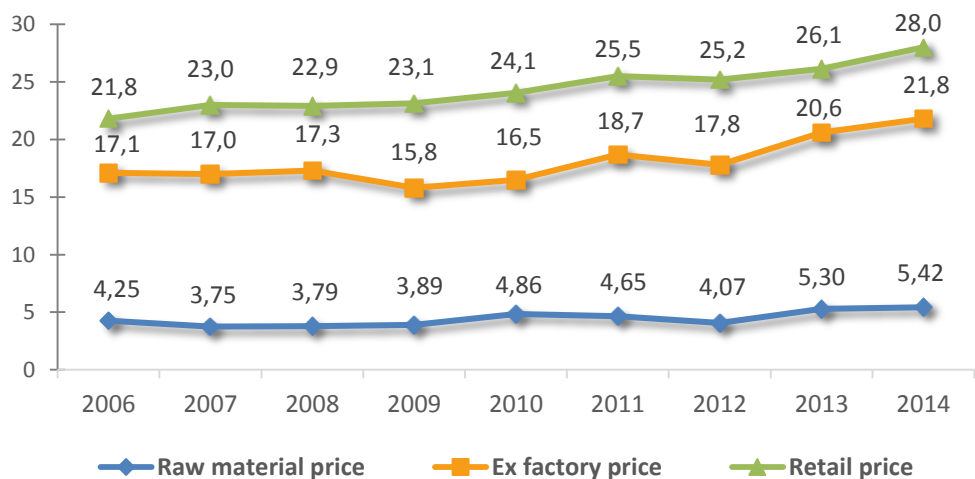
4 PRICE TRANSMISSION IN THE SUPPLY CHAIN

This chapter provides analysis of available average annual prices at the different stages of the value chain, distribution of value between actors and a first analysis of costs and margins using financial accounts of smoking companies.

4.1 Price time series analysis

The following figure presents, on a same graph, the prices calculated in chapter 3. The figure does not show evident asymmetry in the trends of the different prices.

Chart 14 - Average annual prices along the supply chain



Sources: Elaborated from COMEXT (imported fresh salmon), PRODCOM (ex factory price) and Kantar panel (retail price) See tables 3 to 6 for calculation methods and limits.

A first approach is to calculate the “share” of the value obtained by each level/actors of the chain in % of the final price (table 7 below). Considering the limits and error margins on the different average prices, the percentages are indicative of an “average situation”; they might be very different for different products and different types of actors (large processors/retailers, SMEs/small retailers...).

Table 7 - Distribution of the value between actors of the chain

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Suppliers	19,5%	16,3%	16,6%	16,8%	20,2%	18,2%	16,2%	20,3%	19,4%
Processing industry	50,7%	52,4%	49,4%	49,7%	48,4%	47,7%	46,5%	47,1%	44,6%
Retailers	29,8%	31,3%	34,1%	33,5%	31,4%	34,1%	37,3%	32,7%	36,1%

Sources: Percentages calculated from average prices at import level, ex-factory and retail levels (chart 14)
 Breakdown of the final value paid by consumers by level is calculated as follows:
 Suppliers : import price / retail price;
 Processing industry : (ex-factory price – import price) / retail price;
 Retailers : (retail price – ex-factory price)/retail price.

4.2 Costs and margins in the salmon smoking industry

The following tables and figures present available information on the costs and margins in the salmon smoking industry in France, highlighting price transmission along the supply chain. These elements are analysed for two years: 2009 and 2013 (financial accounts for 2014 from DCF not being yet available).

The methodology used for reconstituting the price transmission in the processing industry is as follows:

- Apparent price for raw materials, ex-factory price for processed products of the smoking industry and price at consumer are those calculated in the previous chapter;
- The overall “processing yield” is estimated (for the whole industry and whatever the products) by the ratio volume of raw material entered / volume of processed products. It allows calculating the real cost of raw material, which integrate process losses (head, bones, skin...)². It is finally expressed as a cost in EUR/kg of raw material;
- Some “raw” operating costs (labor costs and processing + packaging + logistics costs) are deducted from aggregated financial accounts (2009 and 2013) of French companies specialized in salmon and trout smoking, available on public sources (DIANE-AMADEUS database), but the French accounting rules do not allow getting more detailed information on specific processing cost, such as energy or packaging costs. Costs are expressed as % of turnover and the % is then applied to ex-factory price to obtain them in EUR/kg;
- The operating margin (EBITDA) is deducted from the financial accounts and converted in EUR/kg;
- It is then verified that the addition of costs and margins of processing industry to raw material price is consistent with the average ex-factory price (which is the case for French salmon industry in 2009 and 2013).

Details of calculations are presented in table 8.

² Most of the flesh – off-cuts, pulp...- is valorised in prepared meals or in pet-food. Only bones and skins are real losses.

Analysing price transmission in the large retailer sector is much more difficult, because of the concentration of the business and its low willingness to communicate on its costs and margins. Moreover, financial results of the fishery and aquaculture products counter are not isolated from the other food or non-food counters in the accounts of the companies. It is thus impossible to apply the methodology developed for the processing level.

No data are available to analyze the breakdown between labor costs, marketing costs, losses and margins for smoked salmon and trout products, which are proposed to consumers in a specific counter in France (chilled seafood delicatessen counter, not always connected to fresh fish counter).

Due to the lack of data, the share of retailing in the value chain is deducted from the difference between retail price (excluding VAT, which is 5.5% for food in France) and ex-factory price (see table 8 and chart 15 on next pages).

Table 8 - Costs and margins in salmon smoking industry in France (2013)

Costs and margins	€/kg	% of ex factory price	% of retail price
Raw material (import) (1)	5,3	25,7%	20,3%
Processing yield on raw material (2)	5,6	27,1%	21,4%
Processing, packaging and logistic costs (3)	4,1	20,0%	15,8%
Labor costs (4)	3,9	18,7%	14,8%
Operating margin of processing (5)	1,7	8,5%	6,7%
Ex factory price (6)	20,6	100,0%	78,9%
Costs and margins of retailing (7)	4,1		15,6%
VAT (5,5%) (8)	1,4		5,5%
Retail price (incl. VAT) (9)	26,1		100,0%

Sources:

- (1) Average yearly price of imported fresh Atlantic salmon calculated from COMEXT
- (2) Overall processing yield is 49% according to the French smokers’ organisation STF-ADEPALE. This yield is consistent with raw material costs, appearing in consolidated accounts of the main French companies specialized in smoked-salmon and smoked-trout. On the basis of an average price of 5.30 EUR/kg for Atlantic salmon imported from Norway, the net costs of raw material, taking into consideration processing loss (head, entrails, slime, bones desiccation...), are estimated at 10.90 EUR/kg.
- (3), (4) & (5) average ratios obtained from consolidated financial accounts of French salmon smoking companies (DCF from FranceAgriMer)
- (3) Other operating costs (excluding labor costs) represented 20% of consolidated turnover of French processors (DCF)
- (4) Labor costs include those of employees of the companies and those of external interim workers.
- (5) Turnover – raw material purchase – labor costs – other operating costs.
- (6) Average ex-factory prices are calculated from PRODCOM.
- (7) No public data are available on costs and margin of fisheries and aquaculture products counter in large retailing companies.
- (8) VAT rates for food products in 2013
- (9) Average retail price from national consumer panels (Kantar).

The comparison of costs and margins calculated for 2009 (previous case study) and 2013 shows that the increase in raw material costs (+36%) was not fully passed on to ex-factory prices (+34%) and impacted the operating margins of processors that only grew by + 31% in value. Retailers appear to have absorbed most of the effects of the increase in aquaculture and processing prices, containing the retail price increase to only + 13%.

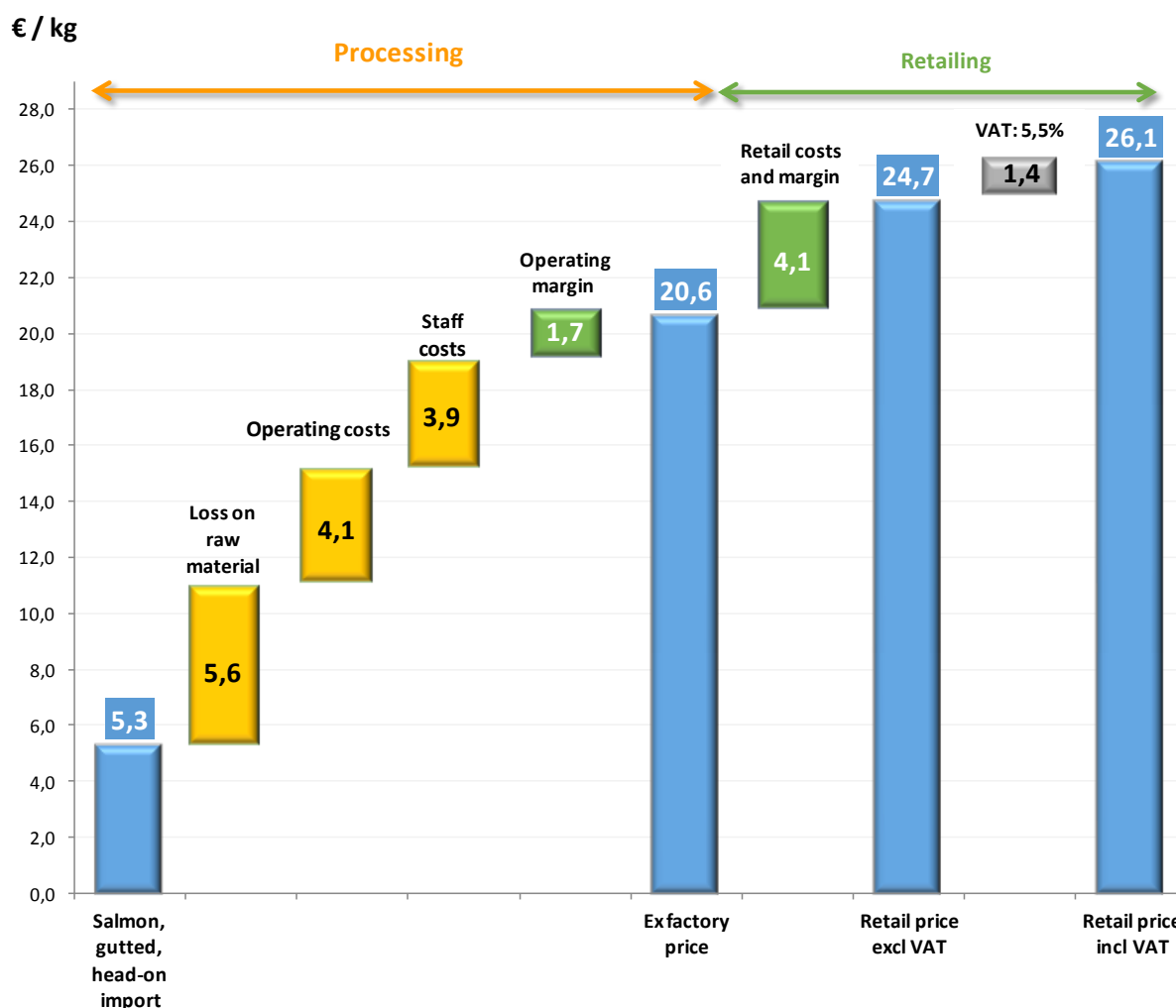
Table 9 – Comparison of costs and margins for 2009 and 2013

Costs and margins	2009 €/kg	2013 €/kg	2013/2009 %
Raw material (import) (1)	3,9	5,3	36 %
Processing yield on raw material (2)	4,1	5,6	37 %
Processing, packaging and logistic costs (3)	3,7	4,1	21 %
Labor costs (4)	2,4	3,9	63 %
Operating margin of processing (5)	1,7	1,7	31 %
Ex factory price (6)	15,7	20,6	34 %
Costs and margins of retailing (7)	6,0	4,1	-37%
VAT (5,5%) (8)	1,3	1,4	17 %
Retail price (incl. VAT) (9)	23,1	26,1	13 %

4.3 Price transmission analysis

The following chart presents the available average costs and margins influencing price transmission in the French smoked salmon industry (2013 data).

Chart 15 - Price transmission for smoked salmon products in France (2013)



Sources: see table 8.

5 TRENDS AND KEY DRIVERS OF PRICES

This chapter provides information and synthetic analysis on external factors influencing prices at different level (raw material costs, operating costs of wholesalers, processors and retailers, currency rates, competition-substitution with other products and suppliers).

5.1 Raw material prices

Salmon is a worldwide commodity affected by cycles of oversupply and undersupply. The consequences of insufficient supply on prices of salmon have been discussed in previous chapters.

The analysis of trend in price of fresh salmon and currency rates (charts below) shows that:

- no clear correlation is observed between currency rates and prices, even if Norway is the reference supplier providing most of the raw material to EU processors;
- The demand for salmon remains high and reduced supply from Chile from 2010 had a major impact on the whole market.

Chart 16 - Trend in price of salmon imported to France from Norway and NOK / EUR rates (index)

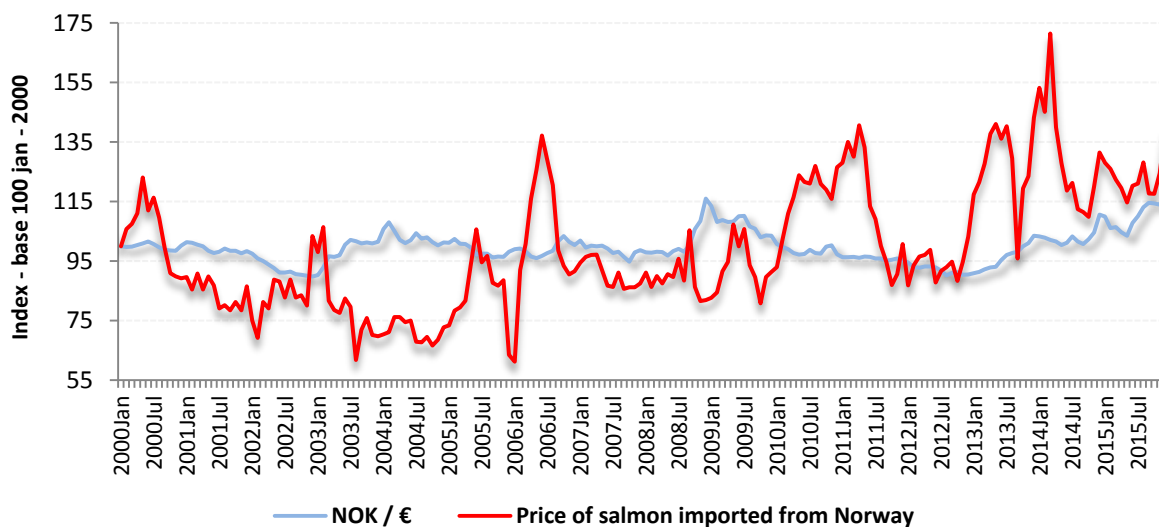
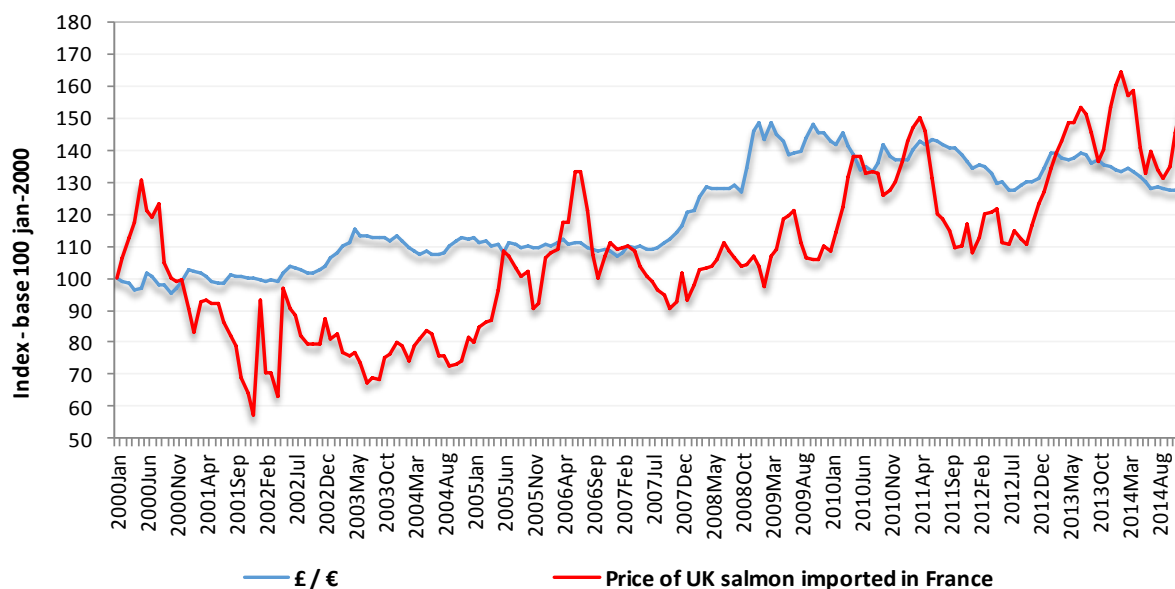


Chart 17 - Trend in price of salmon imported to France from Scotland and £/ € rates (index)



Source: Elaboration from COMEXT import price and ECB currency rates. Presentation in index 100 allows a visual comparison of the relative trends of price of imported raw material and currency rates.

5.2 Ex-factory prices

Restructuring of the processing sector

The Polish salmon-smoking industry experienced a strong development in the last decade, partly encouraged by EU funds (FIFG and EFF). The industry quickly concentrated: the leader Morpol and its challenger Suempol already represented more than 80% of the 2009 turnover of Polish processors.

After having taken most of the German market, Polish processors targeted the highly profitable French market. In 2009, Morpol invested in a logistic platform in eastern France with the aim of supplying France and other European markets, and built a new 12.000 t processing facility in 2012. Suempol entered the French market by taking over the French processor Marcel Baey in Boulogne-sur-Mer in 2013.

On the other hand, the French specialist of retailer brands Meralliance took over a facility in Poland in 2008.

The concentration of salmon smoking industry took a step forward in 2015, with Marine Harvest taking over Morpol and Meralliance being acquired by Thai Union Frozen Products.

Table 10 – EU key players in the smoked salmon industry

Estimated Annual Raw Material - Tonnes GWE			
70 - 90 000	20 - 40 000	10 - 20 000	5 - 10 000
Marine Harvest/ Morpol (PL-FR-UK)	Labeyrie (FR-UK)	Norvelita (LT)	Martiko (ES)
		Young's Seafood (UK)	Friedrichs (DE)
		Meralliance (FR-PL)	Neptune Intl. (DE)
		Suempol (PL-FR)	Intermarché (FR)
		Delpeyrat (FR)	Foppen (NL)
		Lerøy (NL-SE-NO)	Ubago (ES)

Source : Kontali, quoted in Marine Harvest handbook 2014

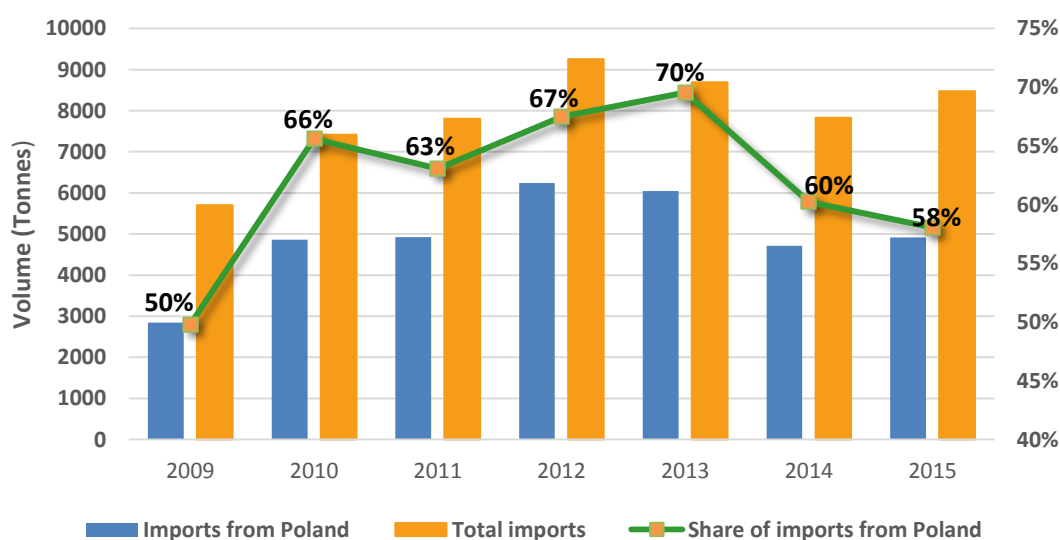
Interactions between French and Polish processors are thus a key element of the market segmentation and potentially a key driver of prices in the French market: Polish processors supply the entry-level and middle-range segments with very competitive products while French processors supply the premium segment, at prices allowing covering the French processing costs

Poland was the third supplier of the French market in 2006. It became the first in 2008 and remains nowadays the main supplier, especially for low price products and small size slices (chart 18 and table 11, next page). Exports were multiplied by 7 in value since 2006.

Imports of smoked salmon in the French market from Poland nevertheless faced a downturn in 2014 with a drop of 1.300 tonnes. The share of Polish smoked salmon in French imports, which rose to 72% in 2013, declined to 63% in 2014.

The mistrust of French consumers towards low-range salmon products following "salmon bashing" campaigns, coupled with brand innovation and communication from Name brands in favour of premium products, have lowered the demand for entry-level products, mostly supplied by Poland. Moreover, the Lithuanian smokers are very competitive new players on this segment and began to supply the French market too.

Chart 18 – French imports of smoked salmon products from Poland



Source: Elaboration from COMEXT (imports in volume)

Prices of imported smoked salmon / France ex-factory prices

The table below presents average prices of smoked salmon imported to France.

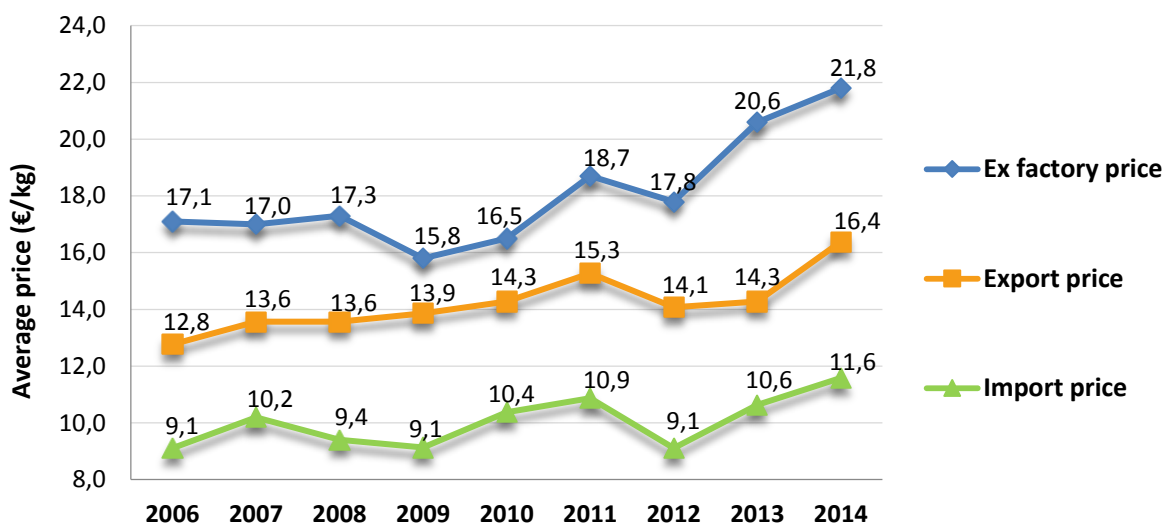
Table 11 - Imports of smoked salmon products in France by origin

	2009	2010	2011	2012	2013	2014	2015
Value (Euro)							
Poland	26 650 874	51 795 987	53 278 654	55 830 818	64 715 049	54 229 088	52 814 881
Germany	11 981 713	10 479 932	11 743 541	11 342 768	11 823 484	13 575 709	13 966 179
United Kingdom	5 831 629	5 464 479	7 784 810	5 204 207	4 660 998	7 793 033	11 877 396
Denmark	2 328 956	3 519 651	3 458 847	2 957 728	3 225 554	2 723 891	2 188 288
Belgium + Luxemburg	2 571 825	3 395 813	3 395 813	4 339 935	4 835 328	6 698 681	8 186 420
Others	2 751 507	2 253 392	5 249 007	4 591 768	3 183 092	5 615 330	5 842 601
TOTAL	52 116 504	76 909 254	84 910 672	84 267 224	92 443 505	90 635 732	94 875 765
Volume (tonnes)							
Poland	2 842	4 863	4 925	6 243	6 048	4 713	4 919
Germany	1 251	857	962	1 092	1 079	1 115	1 269
United Kingdom	988	843	945	806	629	861	1 157
Denmark	245	392	303	275	296	236	186
Belgium +Luxemburg	190	266	199	325	324	519	605
Others	189	192	475	511	320	382	339
TOTAL	5 705	7 413	7 809	9 252	8 696	7 826	8 475
Average prices of imported smoked salmon (€/kg)							
Poland	9,38	10,65	10,82	8,94	10,70	11,51	10,74
Germany	9,58	12,23	12,21	10,39	10,96	12,18	11,01
United Kingdom	5,90	6,48	8,24	6,46	7,41	9,05	10,27
Denmark	9,51	8,98	11,42	10,76	10,90	11,54	11,76
Belgium + Luxemburg	13,54	12,77	17,06	13,35	14,92	12,91	13,53
Others	14,54	11,74	11,05	8,98	9,96	14,72	17,23
TOTAL	9,13	10,38	10,87	9,11	10,63	11,58	11,19

Source: Elaboration from COMEXT (imports in volume and value) - smoked Atlantic and Pacific Salmon (03054100)

The average prices of imported smoked salmon are by far inferior to those observed at ex-factory stage in France (10,20 EUR in 2014). This difference might be attributed to imports of low and mid-range products and/or to a mix between consumer units (retailers brands), whole fillets uncut and/or off cuts used by the French processing industry in prepared meals.

Chart 19 - Trend in ex factory prices for smoked salmon in France / imported products


Sources:

Import and export apparent price: COMEXT, see table 11, Average ex-factory price: PRODCOM 4

The relative price competitiveness of French and Polish processors can be approached through ex-factory prices (table 12 and chart 20).

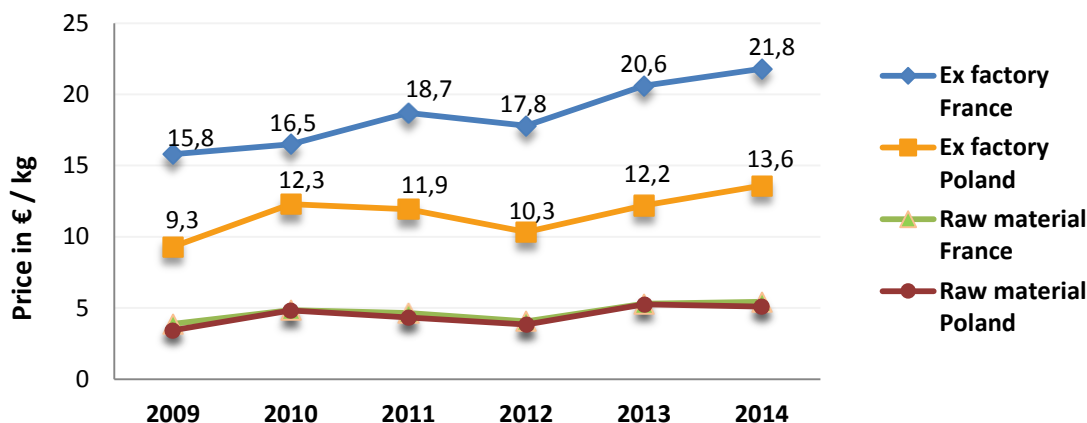
Average ex-factory prices in Poland appear slightly superior to average export prices, which could result from the dominance of low-price products in the products exported to France (low-price and small slices).

Apparent prices of raw material (annual average price of whole fresh salmon imported) are very close for France and Poland (+ 0,23 EUR for France in relation with transport costs), but operational costs (differences in labour costs and process, in presentation and positioning of products) led to ex-factory prices that are about 5 EUR higher in France (+ 30 to 35% compared to ex-factory price in Poland).

Table 12 - - Average prices of smoked salmon products in Poland

Price in EUR per kg	2009	2010	2011	2012	2013	2014
Ex factory price	9,3	12,3	11,9	10,3	12,2	13,6
Export price all destinations	9,7	11,1	11,7	10,0	11,6	12,9
Export price to France	9,4	10,7	10,8	8,9	10,7	11,5
Raw material (import)	3,4	4,8	4,3	3,8	5,3	5,1

Chart 20 – Comparisons between raw material and ex-factory prices in France and Poland

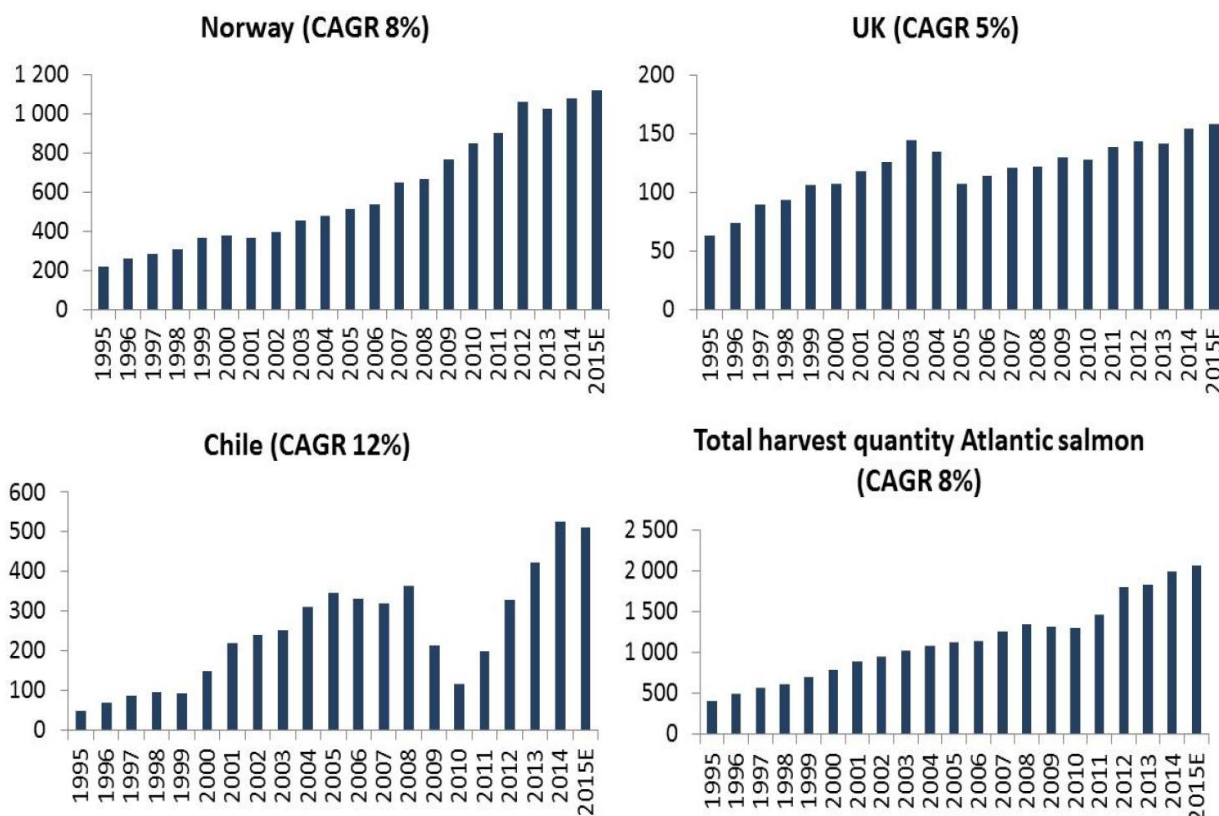


Sources: Import and export price: COMEXT. Ex-factory price: PRODCOM

5.3 Prospective trends

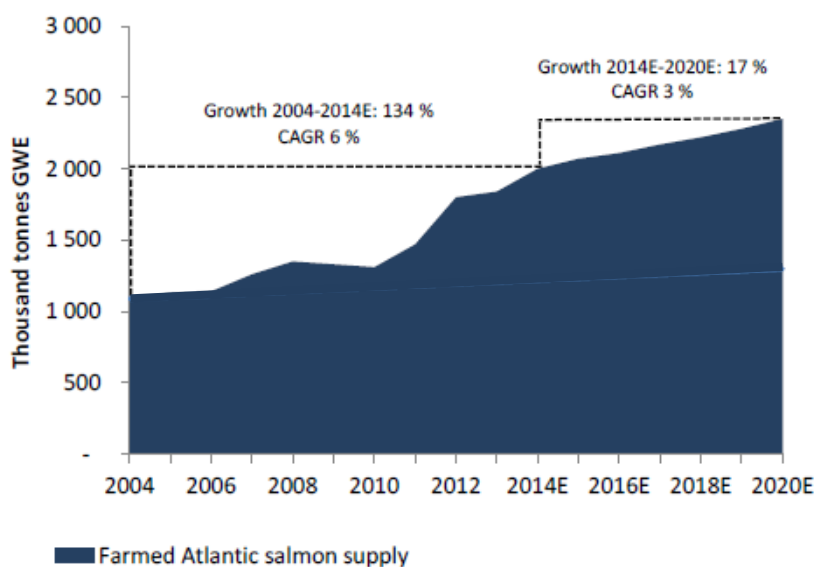
World supply of Atlantic salmon increased with a compound annual growth rate (CAGR³) of 9% in the period 1994-2004. The CAGR reached 6% in the period 2004-2014 due to drops in the UK and Chile productions. It is close to 3% a year from 2014 to 2020.

Chart 21 – Historic total harvest of Atlantic Salmon 1995-2015



Source: Salmon Industry Handbook 2015 – Marine Harvest

³ The Compound Annual Growth Rate is the mean annual growth rate over a specified period of time longer than one year.

Chart 22 – Growth trend and forecast in farmed Atlantic Salmon supply

Source: Kontali quoted in Salmon Industry Handbook 2015 – Marine Harvest

Prices will remain high and volatile in the mid term

The value of fresh salmon has tripled since 2004, while the underlying volume has only grown by 85% (CAGR 6%). This is a good illustration of the strong demand for the product. In 2012 and 2013, demand for salmon significantly over-performed, inducing an increase in price. In 2015, the price declined due to the lack of Russian demand on the back of trade sanctions.

As salmon is perishable and marketed fresh, all production in one period has to be consumed in the same period. The production level is thus difficult to adjust in the short time as the production cycle is three year long. On the other hand, the demand is seasonal (in particular for smoked salmon production). This is why the supplied quantity is very inelastic in the short term, with a large effect on the price volatility.

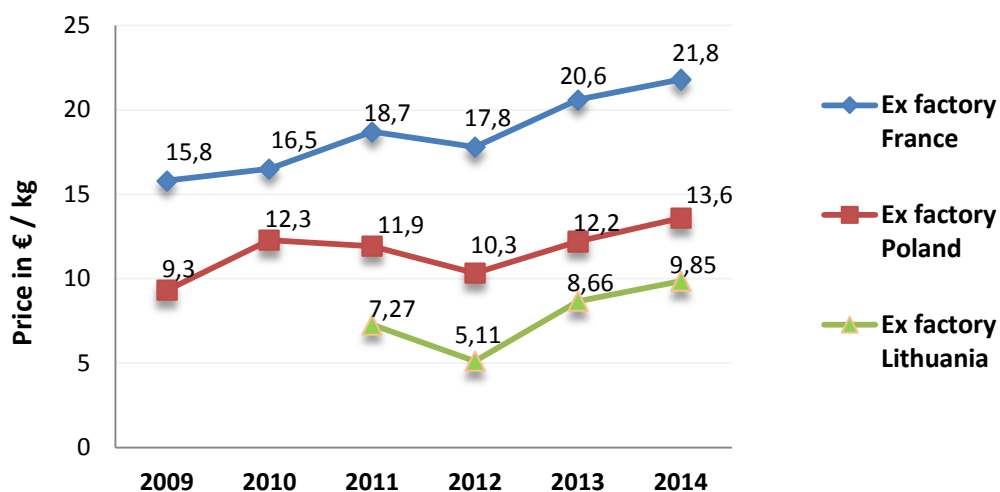
Competition between EU processors and consolidation of the sector

During the last decade, the salmon farming and processing industries have undergone a consolidation process, within the EU and in other regions, which is expected to continue.

Vertical integration (Marine Harvest) and investment from external players in the European salmon smoking industry (acquisition of Meralliance, the French leader of retailer's brands by Thai Frozen Union) will go further, even though the sector appears already concentrated (see table 10).

Competition between EU processors in the UE market is likely to continue in the short term, considering the differences in price competitiveness between producers from Eastern and Western Europe. As an example, ex factory prices in France are far above those observed in the Polish industry and even higher than those practices by the Lithuanian industry which emerged recently as a new and very competitive player on the market (chart 23)

Chart 23 – Ex-factory prices of smoked salmon in France, Lithuania and Poland



Source: PRODCOM

Trends on the French market

The demand of French consumers, affected negatively by strong price increase and deteriorated image, recovered progressively in 2015. Innovations and communication campaigns of large processors promoting premium products partly succeeded in restoring consumers' confidence.

The market remains nevertheless flat, due to high prices for salmon products. The Norway origin continued to suffer (-15% on the first 3 months 2015).