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Global fur retail value

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Executive summary

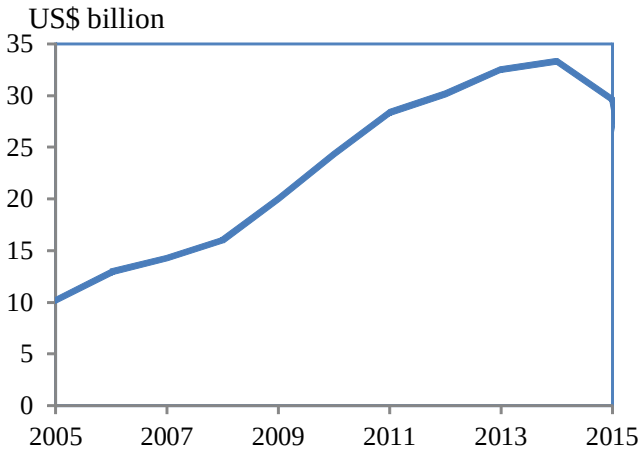
So far no formal studies have been conducted on the fur retail value at national and international level. An important explanation is that there are generally no official statistics or data that can directly provide a credible and comprehensive picture of the size and significance of this industry. From an academic and a business point of view it is important to be able to substantiate and quantify the importance and position of the industry. The global fur retail value must then be estimated. Mark-ups are factors or coefficients that measure the value of fur skins. A mark-up of 7 means, that the value of raw fur skin is multiplied by 7 from auction house to a fur coat in a retail store. Mark-ups can also be used from fur manufacturing sale to retail sale, from import value to retail sale etc. Mark-ups can then be used to calculate the fur retail value in each country, each region and globally.

The mark-up method includes the value of all fur retail products regardless of the form (fur coat, accessories etc.). Results of the mark-up-model show the value at retail level that raw fur skins have generated regardless of outlet, product etc. The model uses mark-ups provided by market experts, and mark-ups can be individual from country to country, and they are variable from year to year. The results from the model are supplemented and verified by statistical databases, by input from market experts etc. shows that mark ups are a useful and acceptable method for calculating the value of fur sales at retail level. Mark-ups from raw fur skin to fur retail: 4-13 (up to 20), depending on the market, product, brand value, value chain, country and year (price of raw fur skins). For major European producers, mark-ups are mostly in the range of 6-10.

The value of world total raw fur skin production in 2015: 4,1 billion USD.

Fur retail values based on official statistics, industry data, mark-ups etc. are estimated for Germany, U.K., Russia, USA and China. The world total fur retail sale amounts to around USD 30 bn.

Figure 1. Global fur retail value 2005-2015



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2. Introduction

Fur retail industry is an important part of the fur value chain. It connects the fur farmers, fur manufacturing companies and other upstream industries to the consumers – the end-users. Market signals are captured and adopted in the fur retail chain and are sent backwards in the value chain. A major part of the added value is also generated in the retail sector.

The retail industry is also a part of a very globalized and vertically integrated business of international sourcing and marketing.

While the upstream parts of the value chains (fur farms and fur skin production) are rather well described, information and statistics about the fur retail industry are much more scarce. The reasons are that consumption statistics are more difficult to collect that production statistics.

Furthermore, fur products are sold at retail levels in different types of outlets and in diversified types of products.

As no method and no source to quantify the fur retail sale alone is complete, six different methods and approaches will be used to give reliable data:

1) Mark-ups from raw fur skin production to fur retail.

2) Mark-ups from raw fur skin manufacturing to fur retail.

3) Official national and/or international statistics.

4) Fur industry data, data from interviews with organizations etc.

5) Import and export statistics (import is often a major source of supply for the fur retail industry).

6) Data from fur retail companies (annual reports, interviews etc.).

3. Concept of model

3.1 Background

Fur garments are produced and purchased in a large number of different countries. International trade is significant, as China is a major producing and exporting country, while Russia and Western countries are major importing countries. In general, the availability of data to estimate the retail value of fur products on country levels is insufficient. National statistics do not include these data, and statistics from business organizations etc. are in general not sufficient and they are often incomparable.

Previous studies have been based on data from few countries with available data, which made it possible to build models that can be used to estimate the retail value of fur products in other similar countries. However, this method and this approach had several weaknesses: First of all, not all countries fit so well in such a model. Secondly, the method estimated the value of fur coats and fur garments at retail level, but fur accessories etc. were not included, and coats etc. with only minor fur parts were included at full value.

Based on this experience, two ways or models to collect data and to estimate the fur retail value can be considered:

Model A) is to structure and standardize data about fur garment retail value from countries with major fur industries.

Model B) is to calculate fur value along the value chain from farmer to consumer based on raw skin production, import and export data along the value chain and mark-ups.

Box 1. The model - at a glance

As the global fur retail value is not already registered – and as the availability and value of the relevant statistics are very limited – other models and methods must be used to estimate the global fur retail value.

This model is based on

* Production and production value of raw fur skin
* Fur manufacturing value
* Import and export of raw fur skins, tanned and dressed skins and fur garment
* Mark-ups

Mark-ups are factors or coefficients that measure the value of fur skins. A mark-up of for example 7 means, that the value of raw fur skins is multiplied with 7 from auction house to a fur coat in a retail store. Mark-ups can also be used from fur manufacturing sale to retail sale, from import value to retail sale etc. Mark-ups can then be used to calculate the fur retail value in each country, each region and globally.

The mark-up method includes all fur retail value regardless of the form (fur coat, accessories etc.). The model uses mark-ups provided by market experts, and mark-ups can be individual from country to country, and they are variable from year to year. The results from the model are supplemented and verified by statistical databases, by input from market experts etc.

The annual fur retail value for individual countries is estimated using the same procedure. However, import and export along the value chain must be included and taken into account.

For some few countries fur retail sales are registered and published by the national statistical authorities. In these cases, the official statistics are used.

This new model B) starts with raw fur skin, where national data are available – or can be available – except for countries, where data are less reliable. Based on mark-ups in the value chain from raw skin to final retail products, and based on import and export of both raw and tanned skin and fur clothing, the total final retail value for each individual country and for all countries in total can be estimated.

Mark-ups have so far been estimated based on knowledge from several European fur organizations and companies.

The model B) allows information about national fur garment value (Model A) as input in the model and to supplement results based on mark-ups.

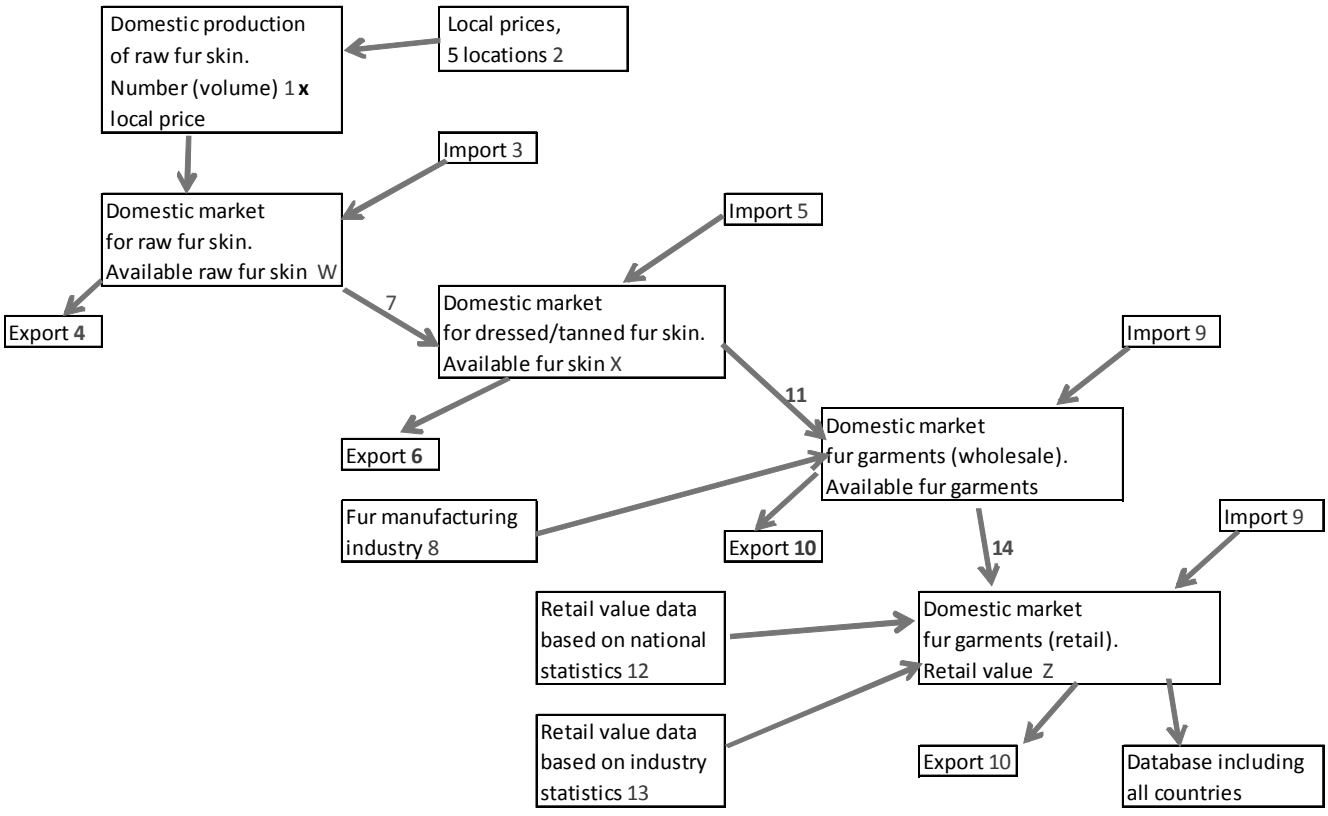
3.2 Model description

A new model can be established based on the following concept:

A) All countries report the annual retail value of fur products being sold (including VAT, tariffs, levies etc.). "Fur products" include products where fur skin is a significant part of the total price of the product. All countries describe briefly how the retail value is estimated. These data comes from "real life", and there is a clear connection between data and market experts. The challenge is to obtain documentation and comparability among countries. It may also be a challenge to have annual reports from all countries.

B) As an alternative and/or supplement to A), a model based on mark-ups, fur skin production, import and export is developed.

Figure 2. The fur garment retail value model: Value chain, trade flows, inter-relations and coefficients



Source: Own presentation

Table 1. The fur garment retail value model: Data sources, units etc.

Code	Data source		Unit
1	HOH, LOCAL	Production of raw fur skin	pieces
2	HOH, LOCAL	Price per skin (from major fur auctions)	$ or Euro
3	HOH, UN	Import of raw fur skin	$ or Euro
4	HOH, UN	Export of raw fur skin	$ or Euro
5	HOH , UN	Import of tanned and dressed fur skin	$ or Euro
6	HOH, UN	Export of tanned and dressed fur skin	$ or Euro
7	LOCAL	Mark up: raw -> dressed and tanned skin	Coefficient
8	HOH, EUROSTAT	Production value of fur garments etc.	$ or Euro
9	HOH, UN	Import of fur garments	$ or Euro
10	HOH, UN	Export of fur garments	$ or Euro
11	LOCAL	Mark up: dressed and tanned skin -> fur garments	Coefficient
12	HOH, LOCAL	Fur retail sale	$ or Euro
13	HOH, LOCAL	Fur retail sale	$ or Euro
14	LOCAL	Mark up: Wholesale -> retail value	Coefficient
W	HOH	Available raw fur skin on domestic market	$ or Euro
X	HOH	Available dressed/tanned skin on domestic market	$ or Euro
Y	HOH	Available fur garments on domestic market (wholesale)	$ or Euro
Z	HOH, LOCAL	Retail value of fur garment sale	$ or Euro

Note: HOH = Henning Otte Hansen. UN = UNCOMTRADE. Other data provider would also be possible. LOCAL = data provided by local (national) institutions regarding market structures, price settings, price transformation etc.

a. Production, import and export data is collected centrally and annually from international databases. Reliable sources can be used, and the level of documentation is high.

b. Mark-ups are estimated at country levels. These mark-ups are supposed to be partly consistent from year to year. An important issue is to obtain credible mark-ups.

The following sections will describe the content, data sources and concept of model B). Also data from model A) is included. The model, value chain, trade flows, inter-relations and coefficients are shown in figure 2, and table 1 shows data sources, coefficients etc.

The model takes production of raw fur skin as a starting point – and then we move forward in the value chain. This "forward integration approach" ensures some consistency of both model, data and results.

The model must be used for all individual countries, and finally all results can be collected in a global database. The model can be updated each year, by use of constant mark-ups, or by updating mark-ups year by year.

Mark-ups are determined by local reporters from each (major or significant) country. Special countries (with no local data supplier, with reliable fur garment retail value, or countries with non-transparent markets like e.g. China) can

Table 2. Mark-up calculations from raw fur skin to retail value

Price of one raw fur (mink) skin, Euro	Retail price of fur coats, Euro	Skins used per fur coat	Mark-up
30	3.500	18	6,5
30	5.000	25	6,7
30	2.500	15	5,6

Source: Own calculations

be treated separately by using data from method A) and add data directly to the bottom line.

Coefficients (mark-ups) are expected to be rather identical for similar countries. However, methods to estimate coefficients can be described. Calculation of fur skins per fur garment can be used: If one fur coat demands for example 25 fur skins, and if the price of both coat and raw (or dressed) fur skin is available, then the factor or mark-up can easily be calculated. See also chapter 6.3 with an example of calculation mark-ups.

The factor/mark-up is expected to be valid for all raw (or dressed) skins, and then the retail value of all skins – regardless of its final use – is included. In that way the results of the mark-up-model show the value at retail level that raw fur skins have generated regardless of outlet, product etc.

Some examples of mark-ups are shown in table 2.

Mark-ups are calculated as:

Mark-up = Retail price of fur coat / value of raw fur skins used.

The table tells us, that the value of one raw fur skin is multiplied by about 6, when it is sold as fur garment at the retail level. So in this case, 6 is the average mark-up or factor going from raw fur skin to retail sale. The value of raw fur skin does not depend on the final use – whether the raw fur skin is used as accessories or as fur coats – so the mark-ups can be assumed to account for the use of all raw fur skins regardless of final use.

The model comprises all links in the value chain – however in many cases countries do not have activities in all links. In these cases “zero” is added, and the model still works.

The model is based on exogenous data, where international databases (UN databases) can be used to extract import and export data, while production data can be identified from national statistics, local key persons, auction houses etc. Mark-ups are endogenous (internal) data, where local reporters have the knowledge to collect data. Mark-ups will probably be rather constant over time, if prices of raw fur skin are constant. However, when raw fur skin prices are high, then mark-ups are expected to be relatively low – and high when raw fur skin prices are low. Mark-ups are expected to be rather identical among similar countries. However, in rich countries mark-ups are expected to be relatively high, as labour costs and other costs are higher. If some countries have extreme mark-ups, actions have be taken in order to ensure comparability.

Box 2. Estimation of domestic supply (available products) from production, import, export and stock variation

Estimation of domestic supply of fur skins – or available fur skins – is essential in the model. Available fur skins are calculated as "production + import - minus export". FAO uses the same method in the FAOSTAT database. FAO also adjusts for stock variations. In the long run stock variations will be zero. As an example, table 3 shows how domestic supply of cheese in Italy is calculated:

Table 3. Calculation of domestic supply quantity of cheese in Italy in 2011 (tonnes)

Production	1.245.175
Import Quantity	479.132
Export Quantity	280.856
Stock Variation	40
Domestic supply quantity	1.443.491

Source: Own calculations based on FAO (2016)

Domestic supply is calculated as production + import - export +/- stock variations

Cheese from FAOSTAT is a rather simple example, as the commodity codes are identical, and as there is only one source. Eurostat data (PRODCOM) is also an important source as also non-agricultural and non-food products (opposite to FAO) are included.

PRODCOM values goods at the price they are sold by the producing enterprise (factory-gate prices), whereas international trade statistics use the value of the goods at the border, which may include transport costs, profit by intermediaries etc. However, there are both important assumptions and limitations to be taken into account:

– External trade records movement of goods across borders. It does not distinguish imports and exports involving sales from other flows, such as transfers of goods between enterprises and their subcontractors or between members of a multi-national enterprise. Flows both with and without sales are compared with the sales reported by PRODCOM.

– Where goods are imported or exported without a sale, the value of the goods reported to Intrastat is estimated. In PRODCOM the current practice is that when goods are produced but not sold by an enterprise (such as in the case of sub-contracting) either no value is given, or the value reported is the fee paid.

The formula 'Apparent consumption = sold production + imports – exports' assumes that
a) "the classification of goods in PRODCOM and External trade are consistent"
b) "the methodologies used for the two surveys produce comparable results"
c) "the valuation of products in the two surveys is comparable"
d) "all goods sold are consumed, either in the reporting county or abroad"
e) "only exports that involve a sale are reported, so all exports reduce consumption"
f) "all imports are consumed"

None of these assumptions is completely correct. This means that the concept of apparent consumption is flawed. Therefore, discrepancies can be caused by any of these methodological inconsistencies. The conclusion is, that in ideal conditions consumption = production + imports - exports, but due to not completely consistent data, it is not possible to extract or calculate the domestic demand for (consumption of) fur apparel, and by that the fur retail value. Further information about the share of production from non-reporting companies will be necessary.
Source: Eurostat (2015)

For some few countries fur retail sales are registered and published by the national statistical authorities or similar institutions. In these cases, these official statistics are used.

3.3 Results of model testing

After testing the model with real data, some observations have been made:

1) The model is consistent: The market = production + import – import +/- changes in stocks

2) The model is sensitive to the number of produced skins. Skins for domestic market are calculated as

Domestic use = production + import - export.

If for example fur skin production in a country is updated or corrected with 200.000 skins, the domestic use will increase. As the retail value = raw fur skin use x mark-up, the retail value will increase with about 200 million US$. Production data are often estimated (and not real statistical data), and updating of annual data with 200.000 skins in a country is not unusual. This will "weaken" the model, if production statistics are not reliable. This is the case for a number of countries, which implies, that fur retail data for some countries cannot be estimated.

3) Mark-ups can be used as long term upscaling from raw skin to retail value, but constant mark-ups in years with very changing prices of raw skin may lead to mis-leading results. If raw skin prices increase 25 per cent in one year, then retail prices should increase by more than 100 per cent. A solution is to use different mark-ups from year to year (and mark-ups will probably change from year to year), but it will require substantial market research. Mark-ups from raw fur skin to fur garment will not be constant from year to year, and mark-ups from fur garment to retail will probably also be variable but to a lesser extent.

4) One solution is to compare prices of fur garments (where you know the number of skins being used) with raw fur skin prices – over 5-10 years. If these data were available – just some few examples – then we can adjust the mark-ups from year to year.

5) Another solution will be to use data from "markets in balance". Mark-ups will be consistent in "an average year" with supply, demand and prices in balance. Retail values from these years can be used as "base values."

6) The model does not incorporate stocks and changes in stocks. It would be easy to include, but data would not be available. Moving averages will reduce or eliminate this uncertainty.

7) Production, export, processing and retail sale will not take place the same year. In a country as Denmark, where 99,5 per cent of production is exported, you will see, that the export value does not correspond with the production value. Some years net-export value is bigger than production value, which is not logic. Lags – and sometimes also stocks – are important explanations for this.

8) Price transmission – changes in raw skin prices influencing prices of fur garments – will take time. Short term raw fur skin prices changes will not influence prices of fur garments immediately. It takes time for raw fur skins to be processed, traded, manufactured and sold

on retail level. Furthermore, the retail industry may wish to sell garments based on high raw skin prices, before they lower their retail prices due to lower skin costs. In practice, there must be a balancing/ leveling over time, which can be done by working with a moving average.

9) The model can be used to estimate long term retail values using constant mark-ups. Annual retail values will demand annual mark-ups or "adjusted mark-ups", where you estimate the raw fur share of fur garments for some years, and you adjust the mark-ups or you adjust the retail value.

10) Data and model have been analyzed and improved in order to be valid:

- results have been be compared with business facts
- Mark-ups must be completely incorporated in the model
- Export and imports of "other fur skin" play a major role in several countries. The content of this export and import must be taken into account.
- Wild fur skins are important in several countries, and they must be included in the calculations
- Special national conditions and/or data can be incorporated in the model.

11) Based on:

- production values of raw skin,
- fur manufacturing industry production value
- import and export of raw mink skin,
- import and export of dressed and tanned mink skin
- import and export of clothing, accessories and other articles of furskin
- national official statistics
- information from fur industry organisations
- reported and estimated mark-ups
- the share of mink skin in total world trade of fur skins,

total retail value of fur garments can be estimated with an acceptable margin of uncertainty.

4. Fur skins: Production and value of production

4.1 Introduction

In order to calculate the fur retail value, it is crucial to estimate the production of raw fur skins. All fur retail sales originate from raw fur skins – to a greater or lesser extent – so the number and the value of produced raw fur skins are important information generating the value of fur skins further along the value chain.

As well as the level of fur production, its development, distribution across countries and value are also interesting. By calculating the value of production, it is possible to determine the importance of the sector compared to other sectors and in relation to the overall economy.

In the vast majority of cases, national statistical institutes and industry organizations do not calculate the value of fur skins produced on fur farms. Often there is no comprehensive market price that can be used. When no figures for production value exist, not even at the national level, it becomes even more difficult and uncertain to make calculations at the international level.

In the following, the value of the world's total fur production is calculated. The number of mink pelts produced per country is multiplied by the average sales price for mink achieved at the major auctions, ie Kopenhagen Fur, SAGA Furs, NAFA and ALC. A weighted average price per year is calculated, using auction prices and/or domestic skin prices published by national statistical offices.

If data are not available, then prices estimated on basis of prices from Kopenhagen Fur are used, as Kopenhagen Fur is considered the largest fur auction house in the world, so one can assume that the pricing here is indicative of international market prices.

As China does not actually sell mink skins at Western auction houses, an estimate of Chinese fur prices is missing. According to Yan (2013), Chinese fur prices are around 30 percent lower than Danish prices achieved at the auction at Kopenhagen Fur, while Chen (2013a) estimates that the level is up to 40 percent lower. Based on Guangcai (2013), it can be calculated that Chinese prices for mink are at least 40 percent lower than Danish prices. For that reason, it has been estimated that Chinese fur prices are 60 percent of the Danish price level.

4.2 Number of produced mink skin

In the following, figures relating to the mink skin production in all major countries are presented, initially focusing on mink skin production, which is by far the most important fur type. The figures are based on information from official statistics, trade associations, companies, scientific papers and reports, interviews with experts, etc. In some cases, estimates have been calculated due to a lack of information. See table 4.

After the table, an explanation of the sources and their quality, the method of calculation, etc. is given.

In recent years, world production has been calculated as the sum of all countries' production data (including the group 'other

Table 4. Mink skin production 2010-2015. Pieces

	2010	2011	2012	2013	2014	2015*
China	15.500.000	16.000.000	16.500.000	31.000.000	34.000.000	32.000.000
Denmark	14.400.000	15.000.000	15.800.000	17.200.000	17.200.000	17.800.000
Poland	4.250.000	4.900.000	5.100.000	7.500.000	9.500.000	9.000.000
Netherlands	5.300.917	5.378.164	5.672.332	5.671.600	5.515.950	5.626.500
USA	2.840.200	3.091.470	3.400.000	3.544.610	3.763.250	3.800.000
Canada	2.298.280	2.713.900	2.804.800	2.771.500	3.384.000	2.900.000
Russia	1.300.000	1.600.000	2.000.000	2.100.000	2.200.000	2.100.000
Finland	1.327.404	1.576.290	1.114.515	1.401.905	1.217.855	1.900.000
Greece	575.000	650.000	800.000	1.200.000	1.800.000	1.800.000
Lithuania	900.000	1.100.000	1.300.000	1.500.000	1.500.000	1.600.000
Sweden	900.000	900.000	975.000	1.050.000	1.100.000	1.000.000
Norway	540.000	500.000	610.000	700.000	850.000	800.000
Belarus	600.000	700.000	800.000	900.000	900.000	800.000
Spain	425.000	450.000	590.000	650.000	700.000	700.000
Latvia	365.000	360.000	400.000	500.000	700.000	600.000
Ukraine	400.000	550.000	700.000	700.000	750.000	600.000
Germany	350.000	350.000	350.000	350.000	350.000	350.000
Iceland	187.045	199.460	200.890	194.000	257.170	238.455
France	180.000	180.000	180.000	180.000	200.000	180.000
Ireland	225.000	225.000	225.000	200.000	200.000	180.000
Estonia	200.000	190.000	180.000	170.000	170.000	180.000
Italy	170.000	150.000	150.000	160.000	180.000	170.000
Belgium	150.000	150.000	150.000	150.000	170.000	150.000
Argentina	10.000	12.000	15.000	17.000	17.000	17.000
Japan	1.700	1.600	2.200	1.500	1.500	1.500
Other	500.000	500.000	500.000	500.000	500.000	500.000
World**	53.900.000	57.400.000	60.500.000	80.300.000	87.100.000	85.000.000

* Estimate

** The number is rounded to the nearest 100.000

Sources:

China

There is no production of mink pelts in Hong Kong.

Sources: China Leather Industry Association & China Fur Breeders Commission (2016), Kopenhagen Fur (2016 b + c) EFBA (2013), X Bin and GAO Ya-qin (2007), Yan, L. (2013), sun, Guangeai (2010 +2013), Yan Hua; Zhang Wei and Liu Xin (2012), China Chamber of Commerce of Foodstuffs and Native Produce (2012), Chen, W. (2013a + b), Zhang Tong - gong (2006), Yang Xi Tao, Zhang Wei, Zhou Xue-hong (2011), USDA (2010), Zhang Shuhua (2005)

Denmark

Official statistics are from Statistics Denmark and Kopenhagen Fur. Statistics Denmark is to some extent based on industry information.

Sources: Statistics Denmark (2016) and Kopenhagen Fur (2016 b + c).

Poland

Sources: Wojick, Szczepan (2014) and Kopenhagen Fur (2016 b + c).

Finland
Official statistics are from Statistics Finland for the production of both mink and fox furs on farms and skins from wild fur-bearing animals.
Source: Statistics Finland (several years).

Sweden
Official statistics are from Statistics Sweden concerning the number of breeders of mink and foxes (number of farms) and the number of breeding animals. Official statistics are based on figures from Sweden's Fur Breeders' Association. The number of produced mink pelts is then calculated based on the population size
Source: Statistics Sweden (several years).

Norway
In Norway, the number of fur farms (number of foxes and mink) and sales of mink and fox pelts are published. Data are based on Norway's sales of fur skins. It is subsequently assumed that sales equal production.
Source: Statistics Norway (several years).

Iceland
The population of mink, foxes, etc. is published annually along with figures for the number of skins per mated female. The annual fur production is then calculated based on this information.
Source: Statistics Iceland (several years).

The Netherlands
The size of the mink population (number of females) is published each year. The figures include all kinds of fur animals, although the majority of produced furs are mink – especially in recent years. In addition, figures for the number of furs per female per year are available. The annual fur production is then calculated based on this information.
Sources: CBS (2016) and Boekhorst (2013).

Greece
Sources: Vlachveti, Aspasia; Notta, Ourania and Demiri, Stamatia (2010)

France
The French fur sector is relatively small and only consists of 18 farms. Data are based on industry information, which is validated by import and export figures.
Sources: La Fourrure Française (2013) and Kopenhagen Fur (2016c).

Italy
Sources: Associazione Italiana Pellicceria (2016), Fur Auctions (2013b) and Kopenhagen Fur (2016 b + c).

Ireland
There are five authorised mink farms, which produce 200.000-250.000 mink pelts per year. As the production of fur in Ireland is almost 100 percent export-oriented, the export figures are used as a control for the production data or as a proxy.
Sources: Department of Agriculture, Food and the Marine (2012), Kopenhagen Fur (2016c) and the UN (2016a).

Germany
Sources: German Fur Association of Wholesalers and Traders (2013) and Kopenhagen Fur (2016 b+c).

UK
Fur production ceased in 2003. The production of mink pelts in the years up to 2003 has been estimated and published.
Source: McGinness and Richards (2000).

Latvia
Sources: Ministry of Agriculture Republic of Latvia (2009), EFBA (2013) and UN (2016a).

Lithuania
Sources: Tallat-Kelpsa, C. (2013), EFBA (2013) and UN (2016a)

Estonia
The volume of fur production is estimated based on the export of raw fur skins

Russia
The statistical basis is very uncertain.
Sources: Kopenhagen Fur (2016 b + c) EFBA (2013), Balakirev and Tinaeva (2001), Guangcai, Sun (2010), Titova (2003), Sojuzpushnina (2013), Fur Auctions (2015a) and Fur Farms of Russia catalogue (2015, 2016 and 2017)

Ukraine
Source: Iemelianova (2015a+b)

Belarus
Sources: Fur Auctions (2013a) based on the IFTF.

Argentina
Sources: Made in Argentina (2013) IFTF (2013) and El Poral de Chincillas en Internet (2013)

Japan
Source: JFA (2013)

Canada
The number of produced mink and fox skins, the population, number of farms, etc are published regularly by Statistics Canada.
Source: Statistics Canada (2016).

USA
The U.S. Department of Agriculture, USDA, publishes annual figures regarding the number of farms, the size of the population, production, prices, etc. for mink.
Source: USDA (several years).

World production
In recent years, world production has been calculated as the sum of all countries' production data (including the group 'other countries'). Previously, world production was calculated as a separate estimate based on Kopenhagen Fur (2016c).

countries'). Previously, world production was calculated as a separate estimate based on Kopenhagen Fur (2016c).

The 25 countries shown in table 3 account for 99.99 percent of total world exports of raw skins and 96,2 percent of total imports of raw skins.

As is evident from table 3 and the accompanying notes and sources, there are no official sources, which document the production of mink pelts in all the individual countries. However, it is possible to obtain a fairly reliable picture of mink production by country by referring to official statistics from some countries, reports from national and international trade organizations and professional and scientific articles.

4.3 Prices of mink skins

It is necessary to have access to prices of raw fur skins in order to calculate the value of production of raw fur skins. In order to make a satisfactory pricing, it is worth noting that the market for fur skins has special features:

- The fur market is free and unprotected, which is in contrast to the majority of agricultural products. The income of fur farmers therefore comes almost exclusively from the market.

- A very large share of the production is traded on international markets. The export share is unusually high in many of the producing countries, especially compared to other agricultural products.

- The fur market is very volatile and is characterized by fluctuating prices, supply and demand over time. The fluctuating prices, which are created by changes in supply and demand, are especially important as they can be very decisive for the income and business opportunities of the sector. The volatility of the change in the price of raw fur skins is also an unusual situation in comparison with other agricultural sectors.

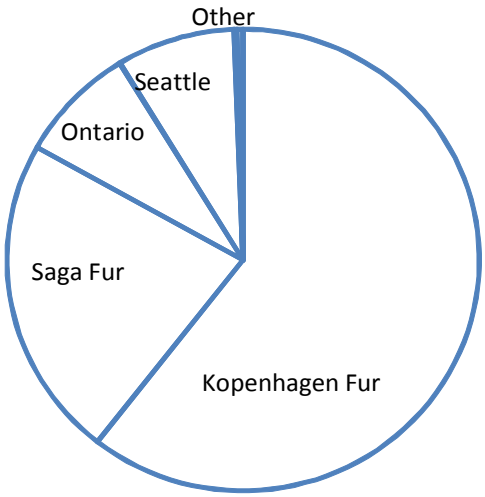
- Raw fur skins are sorted in a large number of uniform types, depending on quality, size etc. This means that an average price can cover significant differences and variations.

Price setting typically takes place on the big fur auctions.

At the international level, there are up to six major auction houses, which are located in Copenhagen, Helsinki, Toronto, Seattle, Ontario and Saint Petersburg. They account for the bulk of fur sales worldwide and compete with each other to get as many fur skins as possible to auction.

See figure 3.

Figure 3. Size of the largest fur auction houses measured by total number of traded fur skins



Note: 2015 or most recent year with available data.

Source: Own presentation based on Kopenhagen Fur (2016a), SAGA Furs (2016), NAFA (2016), ALC (2016), Sojuzpushnina (2016), Fur Harvesters' Auctions Inc. (2016)

Also collaboration among fur auction houses exists: In 2013, ALC (Seattle), Fur Harvesters Auction Ontario) and Saga Furs signed an agreement to hold joint actions at Saga Furs in Helsinki.

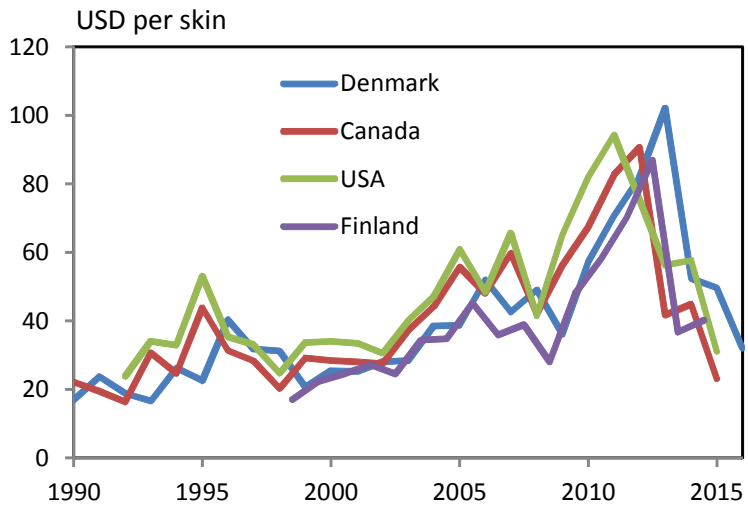
Around 50 million fur skins are sold through these four international fur auction houses. This should be seen in conjunction with an annual production of the order of 85 million mink furs and 95 million furs in total (2015). Therefore, a significant share of the world's fur production is not traded on the major fur auction houses.

The auction prices seem to follow the same trend from auction house to auction house - see Figure 4.

Figure 4 shows, that the prices follow the same variations and have more or less the same level. More detailed data for each country/auction house is shown in figure 5-8.

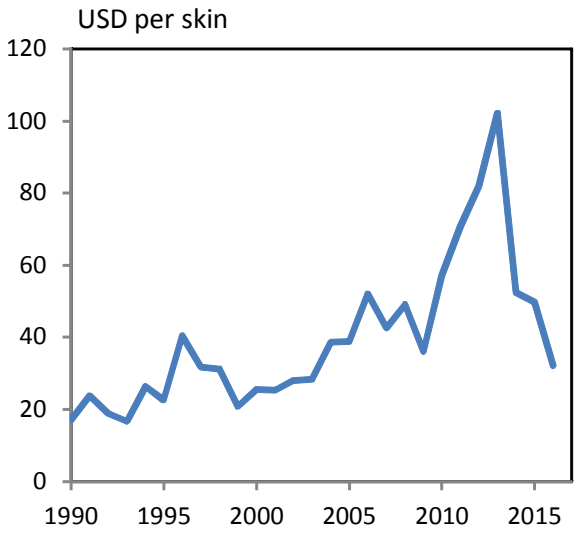
In order to calculate a value for all raw mink skin certain assumptions must be taken:

Figure 4. Prices of mink skins at four major fur auction houses



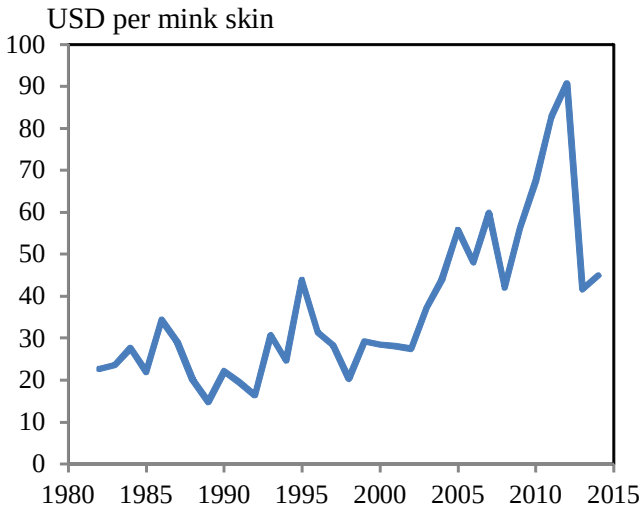
Sources: Own presentation based on Kopenhagen Fur (2016), Statistics Canada (2016), Profur (2016) and USDA (several issues)

Figure 5. Average prices of mink skins at Kopenhagen Fur



Source: Own calculations based on Kopenhagen Fur (2017)

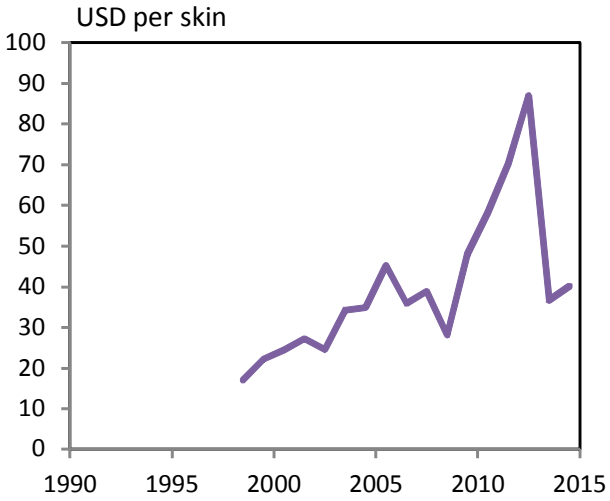
Figure 6. Average price of mink skins in Canada



Note: Value of pelts divided by number of pelts produced

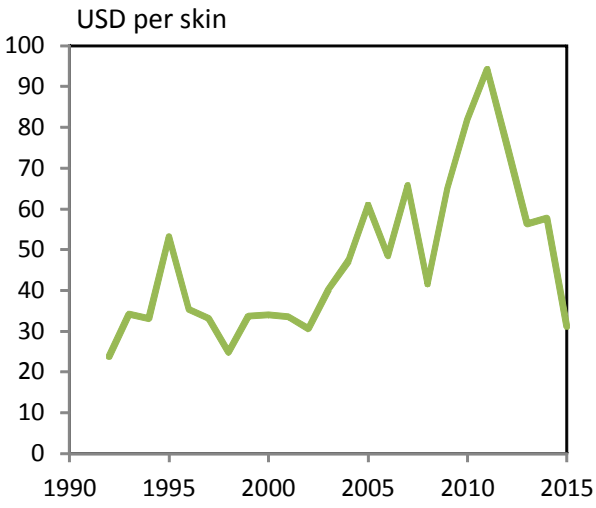
Source: Own calculations based on Statistics Canada (2016)

Figure 7. Average prices of mink skins at Saga Fur



Source: Own calculations based on Profur (2016)

Figure 8. Average price of mink skins in USA



Source: Own calculations based on USDA (several issues)

The number of mink pelts produced per country is multiplied by the average sales price for mink achieved at the major auctions, i.e. Kopenhagen Fur, SAGA Furs, NAFA and ALC. A weighted average price per year is calculated, using auction prices and/or domestic skin prices published by national statistical offices.

Kopenhagen Fur sells close to 28 million skins per year, but Denmark only produces around 18 million skins per year. Denmark imports raw fur skins – to be sold at Kopenhagen Fur – from Poland, the Netherlands, Norway, Lithuania, Sweden etc., so a part of the skins from these countries will be priced based on prices from auctions at Kopenhagen Fur.

Similarly, Finland imports skins from a number of countries, and a part of the fur production from these countries is priced based on the prices achieved at auctions at Saga Fur.

China's production is to great extent not traded on auctions, and therefore China's production has its own weighting.

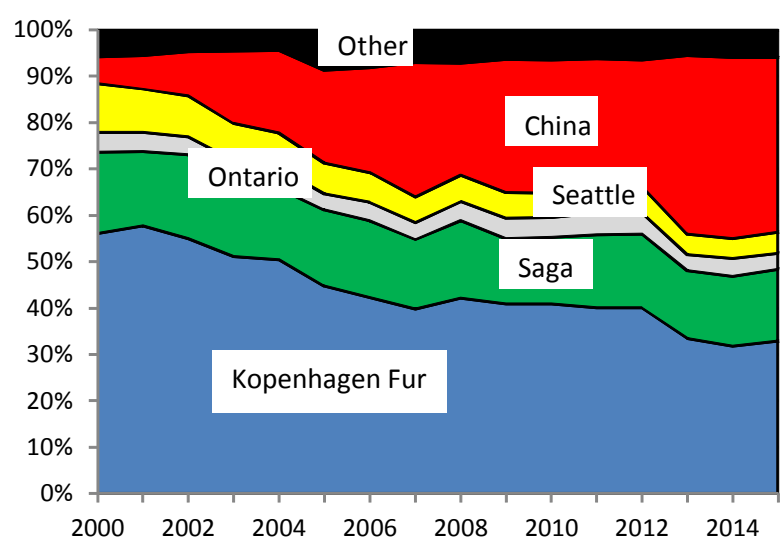
Figure 9 shows estimated weights to be used for calculating value of raw world mink skins production.

4.4. Other skins than mink skins

So far there has been focus on mink skins, as it is the most important skin product, and since there is a relatively good price information for this product. However, there are a number of other raw fur products, and table 5 shows their importance in international trade.

The table shows, amongst other things, that mink is by far the most important fur regarding international trade. Mink ac-

Figure 9. Weights to be used for calculating an world average price of raw mink skins, 2000-2015



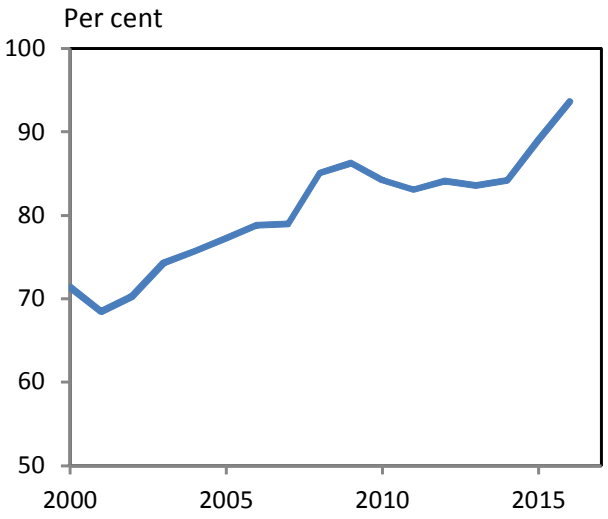
Source: Own calculations based on data from table 4 + figure 5-8

counts for 89 percent (2015) of total global trade in unprocessed fur.

Of the different fur types, fox is the next largest single product, but it only accounts for approximately 7 percent of total trade in unprocessed fur. At the same time, the importance of fox has decreased significantly regarding international trade in unprocessed fur: In the mid-1990s, fox accounted for up to 1/3 of total international trade in raw fur skin, but it has since witnessed a considerable decline.

On the contrary, during recent 10-15 years the importance of mink fur skin has increased significantly regarding international trade in raw fur skin.

Figure 10. Share of mink skin in world total fur export 2000-2016



Note: 2016: Preliminary

Source: Own calculations based on COMTRADE (2017)

Assuming that the importance of mink skin on the international market reflects the importance of mink skin generally (in relation to fur skin types that are relevant in this project, excluding rabbit skins etc.) then the total value of all raw fur skins

Table 5. World trade (export) of raw furskins (2015)

Code Product	USD	%
430110 (Raw mink furskins, whole)	4.420.163.398	89,0
430120 (Raw rabbit or hare furskins, whole)		
430130 (Raw Persian and similar lamb furskins, whole)	13.947.263	0,3
430140 (Raw beaver furskins, whole)		
430150 (Raw musk-rat furskins, whole)		
430160 (Raw fox furskins, whole)	341.147.539	6,9
430170 (Raw seal furskins, whole)		
430180 (Raw furskins of other animals, whole)	187.106.480	3,8
430190 (Raw furskin pieces (e.g. heads, tails, paws))	1.990.167	0,0
4301 (Raw furskins, pieces for furriers use, not hides etc.)	4.964.354.847	100,0

Source: Own calculations based on UN (2017)

can be estimated by multiplying the value of mink skins with a factor representing the share of mink of international fur trade year by year. The total value of all raw fur skins is (for 2015):

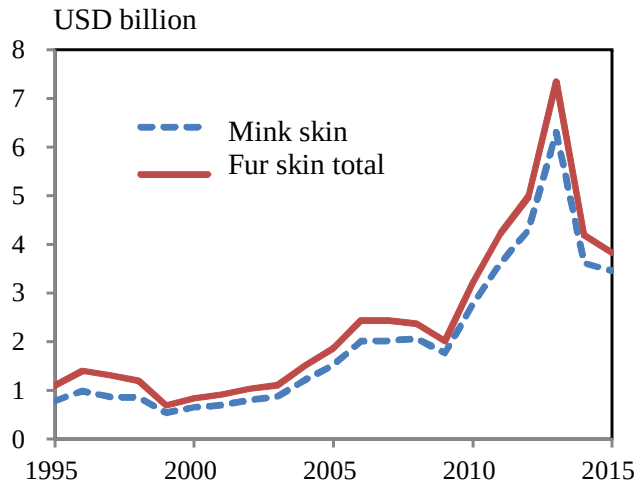
$V_{all} = V_{mink} * (100/89)$

V_{all} = Value of all raw skin production
V_{mink} = Value of raw mink skin production

As the relative importance of mink skin is changing from year to year – and as there seems to be a clear trend – we must take that into account when we estimate the value of all raw skin production.

Based on these assumptions the value of global raw mink and fur skin production is estimated in figure 11.

Figure 11. Value of global raw mink and fur skin production 1995-2015



Source: Own calculations based on data from table 4 and figure 4-7

Assumptions:

The number of raw mink skins produced is as shown in table 4.

The prices of the skins are collected from the four major fur auctions (figure 5-8).

The prices of raw mink skins have each a weight corresponding to the size of the fur auctions.

For China: China's production is largely not traded on auctions, and therefore, Chinese production has its own weighting.

Value of all raw skin production is estimated from „value of raw mink skin production", adjusted yearly for mink fur skins' share of total world export of fur skins.

5. Fur manufacturing industry

Statistics about production, employment, turnover, import, export etc. in the fur manufacturing industry in EU countries are published by Eurostat. Fur manufacturing is a step further down stream in the fur value chain and closer to the fur retail level. By moving this step further we eliminate an uncertainty in the fur skin production level (fur farming), and mark-ups are reduced and shall only cover value added from fur manufacturing to fur retail level.

Statistics about "sold production value in fur manufacturing industry" can be used, when information about production of raw fur skin is limited or unreliable. The statistics can also be used to verify or substantiate raw fur skin production.

However, these production statistics from Eurostat have limitations:

Firstly, not all countries report relevant data to Eurostat – or data are not updated or they are inadequate – so important data are not available.

Secondly, fur manufacturing statistics from Eurostat only covers companies with more than 20 people employed. The statistical data must then be multiplied with a factor dependent of the share that companies with more than 20 people employed cover. This correction factor is determined through interviews with fur business people in individual countries. However, an extra uncertainty is added in this way.

Through a questionnaire sent to European fur organisations, correction factors have been collected. Table 6 shows that only a minor share of companies in the fur manufacturing industry has more than 20 people employed.

Table 6. Percentage of fur manufacturing that comes from companies of less than 20 people

	Per cent
Germany	90
Turkey	80
Italy	90
UK	100
Greece	45

Source: Questionnaire and answers from European fur organizations

Table 7 includes figures for the European fur manufacturing industry: Sold production value. 2015 or most recent year with available data.

Table 8-11 contains figures from 1988 to 2014 showing production value, export, import and net import.

Table 7. Fur manufacturing industry: Sold production value. 2015 or most recent year with available data

	15.111.050 Tanned or dressed furskins or skins (excluding rabbit, hare or lamb) Euro	14.201.030 Articles of apparel and clothing accessories (excluding hats and headgear) Euro	14.201.090 Articles of furskin (excluding apparel, clothing accessories, hats and headgear) Euro
France		6.747.227	124.615
Netherlands			
Germany			2.292.962
Italy	1.459.036.000	175.328.000	310.218.000
United Kingdom		1.226.166	1.122.153
Ireland	4.307.000		
Denmark	16.759	2.410.474	222.765
Greece	5.688.632	89.326.266	14.823.752
Portugal	9.575.576	1.761.597	131.619
Spain	5.162.375	4.076.943	
Belgium	971.437		
Luxemburg			
Iceland			
Norway			
Sweden	1.607.659		
Finland	317.098	2.107.347	420.584
Austria			
Malta			
Turkey	80.794.684	185.248.309	4.980.272
Estonia	946.789	15.344	7.540
Latvia	213.536	1.014.007	
Lituania		828.911	56.389
Poland	1.337.093	146.149	687.329
Czech Republic		128.176	102.553
Slovakia		1.329.065	359.190
Hungary	919.593		86.640
Romania	1.404.369	1.742.277	164.886
Bulgaria	71.582	157.992	196.850
Slovenia			
Croatia		920	
Bosnia and Herzegovina			
For. JRep. Macedonia		456.880	
Montenegro			
Serbia			
EU15TOTALS			
EU25TOTALS			
EU27TOTALS	1.504.207.702		331.994.464
EU28TOTALS		287.663.676	

Source: Eurostat (2016).

Table 8

14201090 - Articles of furskin (excluding apparel, clothing accessories, hats and headgear)
14201030 - Articles of apparel and clothing accessories, of furskins (excluding hats and headgear)

Sold production value

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
France	0	3.949.936	5.968.352	7.091.000	17.012.000	11.710.000	9.323.000	9.250.000			16.464.932			8.903.403	6.959.970	6.713.120	6.871.842	0
Netherlands																		
Germany	5.471.535	5.828.817	5.482.000	5.613.000	6.037.000	5.184.000	5.887.000	6.157.780	4.385.390			2.500.170	2.292.962				2.292.962	0
Italy			76.368.481	73.274.905	60.428.039	170.116.000	184.154.000	181.417.000	208.057.000	177.319.000	198.164.000	207.468.000	215.385.000	263.185.000	352.243.000	437.922.000	481.203.000	485.546.000
United Kingdom	2.884.388	1.114.316	777.687		1.875.308	1.956.667		880.374	1.906.913	550.896	464.661	520.798	876.620	834.217	1.125.951	1.487.177	1.487.177	1.487.177
Ireland																		
Denmark	5.108.210	5.025.553	7.023.263	6.512.652	7.171.242	6.600.329	6.303.579	6.585.657	6.802.966	5.899.659	5.204.265	4.244.849	6.052.529	4.655.732	2.125.825	1.672.455	6.780.866	2.410.474
Greece	55.917.922	72.752.382	45.474	48.579	48.964.567	44.538.216	49.689.180	56.808.099	56.072.166	57.786.279	57.029.857	40.919.114	69.348.519	80.404.813	81.244.396	115.606.998	104.749.893	104.150.018
Portugal	#VALUE!	#VALUE!	861.758	1.339.409	2.242.376	2.389.353	2.209.273	2.297.790	1.175.495	1.180.677	1.862.599	1.850.427	1.772.058	1.519.215	1.755.427		1.755.427	0
Spain	5.953.518	7.666.793	22.935.000	11.455.000	16.929.983	11.644.492	7.747.034	13.184.141	13.900.781	11.136.415	8.419.804	8.799.040	7.885.391	6.728.274	6.072.728	5.665.101	5.633.369	4.076.943
Belgium																		
Luxemburg																		
Iceland																		
Norway																		
Sweden																		
Finland	13.397.576	11.328.019	9.607.952	9.663.569	9.462.709	9.098.561	7.175.640	8.734.580	8.146.013	8.086.594	7.320.210	4.450.075	4.866.914	5.333.134	5.359.926	2.755.423	4.286.254	2.527.931
Austria																		
Malta																		
Turkey									158.491.118	189.405.057	167.779.949		190.228.581				190.228.581	0
Estonia						200.363	168.982	162.655	12.336	25.756	146.677	121.176	154.263	204.050	451.765	228.292	236.123	15.344
Latvia				446.725	564.702			1.014.007									1.014.007	0
Lituania			2.608.201	3.315.198	2.614.698	1.456.202	4.199.079	1.893.826	2.286.405	2.415.460	2.054.448	1.147.503	1.113.849	1.329.993	1.774.617	1.541.966	56.389	828.911
Poland					3.178.783	4.268.793	3.556.287	2.857.246	4.505.557	4.905.066	4.446.513	2.595.064					4.905.066	4.446.513
Czech Republic				452.928	408.236	1.678.489				1.916.445	1.933.897	375.373	138.942		159.927	128.176	128.176	128.176
Slovakia	2.862.822	1.654	845	157	1.430.091	975.104	582.729				359.190						359.190	0
Hungary				1.139.649	1.108.447	815.703	413.920	563.296	73.867	86.640							1.108.447	815.703
Romania			9.696.331	8.095.988	4.813.583	3.065.254	2.998.631	0	6.868.007	5.242.084	3.779.937	1.328.850	1.766.511	2.384.717	1.541.929	1.723.259	1.388.283	1.742.277
Bulgaria							417.243	222.416	379.384	161.059	181.000	130.381	182.023	277.124	156.458	143.164	233.153	157.992
Slovenia																		
Croatia						186.027	50.699	1.216	24.581		2.364			110.032	29.532	20.598	46.003	920
Bosnia and Herzegovina																		
For. JRep. Macedonia														456.880			456.880	0
Montenegro																		
Serbia																145.516	145.516	145.516
EU15TOTALS	258.776.230	265.706.799	137.504.783	122.462.462	177.590.156	269.002.533	284.450.139	290.454.351										
EU25TOTALS						279.762.371	296.755.903	299.891.703	326.052.356	293.385.629	315.011.312	293.930.973	333.746.526	382.935.358	468.452.380			
EU27TOTALS						282.827.625	300.261.235	300.214.119	333.422.896	298.938.672	319.182.249	295.414.204	335.695.061	385.597.199	470.150.767	589.456.863	672.519.725	331.994.464
EU28TOTALS						283.013.652	300.311.934	300.215.335	333.447.477	299.079.211	319.184.603	295.568.736	335.827.914	385.707.231	470.180.299	589.477.461	346.443.109	267.663.676

Table 9

14201090 - Articles of furskin (excluding apparel, clothing accessories, hats and headgear)
14201030 - Articles of apparel and clothing accessories, of furskins (excluding hats and headgear)

Export value

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
France	12.623.880	13.067.570	18.596.110	22.307.960	25.327.120	27.587.300	28.193.100	35.324.730	44.010.890	42.312.430	46.109.620	49.758.630	44.060.720	53.012.930	64.311.100	76.304.290	86.714.450	91.575.270
Netherlands	838.610	713.040	527.410	748.920	469.310	781.170	1.472.530	2.584.900	1.006.810	1.052.010	2.540.020	2.133.500	1.850.350	2.861.100	2.574.240	3.360.260	6.862.980	4.390.720
Germany	57.634.600	49.761.830	55.652.710	62.362.460	68.159.890	64.923.550	69.790.150	73.367.340	87.664.900	70.778.950	64.179.170	51.053.970	63.227.350	80.690.330	83.184.980	80.044.210	75.654.630	53.469.170
Italy	87.706.840	70.812.830	109.127.470	132.445.020	146.924.760	136.504.300	139.641.190	165.370.310	205.346.080	194.438.190	192.670.530	122.699.020	170.453.700	233.891.670	280.230.570	345.770.210	327.119.650	340.385.750
United Kingdom	4.852.260	4.783.630	4.151.110	5.161.340	6.761.890	8.991.420	7.338.970	8.979.190	9.472.580	8.239.180	18.904.350	11.161.380	24.402.840	19.684.170	16.659.220	19.057.600	20.515.380	23.389.800
Ireland	131.590	9.460	7.170	48.410	25.120	84.880	24.420	14.090	138.930	25.950	72.850	29.110	1.000	12.100	8.240	4.730	4.820	12.780
Denmark	5.631.350	4.604.300	3.965.190	4.130.970	5.197.920	5.259.600	5.123.320	5.517.910	5.566.160	4.494.760	3.963.840	5.007.210	6.569.950	7.620.840	6.759.220	5.184.660	7.639.590	8.707.200
Greece	217.690.800	178.418.890	194.365.550	245.815.970	193.596.580	232.347.440	213.693.070	215.274.300	250.460.840	236.097.350	244.096.190	147.655.820	192.835.380	213.553.550	234.578.100	220.927.060	198.916.210	126.092.550
Portugal	78.400	208.110	146.850	163.990	429.730	471.200	229.390	269.400	517.490	336.750	260.610	130.630	607.430	977.720	584.610	464.040	359.540	255.940
Spain	4.761.120	3.154.790	7.104.200	8.362.940	8.091.770	8.468.790	10.438.170	8.130.560	9.074.090	7.444.980	7.706.500	8.126.360	7.638.700	9.493.000	11.102.310	12.297.540	12.271.770	11.403.040
Belgium	1.322.400	878.400	1.279.500	1.345.060	2.034.570	1.411.070	2.415.160	5.609.960	5.475.660	5.531.230	7.132.820	9.638.270	12.306.250	13.560.290	12.476.920	8.646.590	13.309.510	12.955.410
Luxemburg		157.610	36.290	80.860	28.880	59.120	155.350	8.810	23.400	25.310	24.610	34.890	26.280	22.700	104.400	90.390	151.080	137.420
Iceland																		
Norway																		
Sweden	5.273.460	6.156.820	4.962.640	3.188.420	4.307.240	6.415.970	6.386.920	5.544.080	6.555.340	4.363.930	2.984.990	2.040.010	2.872.740	3.482.860	2.811.410	2.374.090	3.976.600	4.196.570
Finland	13.276.310	9.535.870	10.394.710	11.144.810	10.566.110	8.928.300	7.005.610	6.764.240	8.163.000	8.946.790	6.945.600	4.379.520	4.835.970	5.851.910	4.901.700	4.748.910	4.059.930	2.643.020
Austria	5.750.270	3.798.040	3.742.040	4.597.460	5.610.570	4.976.980	4.557.220	11.225.870	15.446.460	12.183.880	8.041.790	4.932.470	5.538.950	7.387.980	9.507.630	8.665.140	7.902.270	6.681.710
Malta								1.710		210	74.360	18.200	3.090					
Turkey																		
Estonia			620.960	613.860	620.300	726.070	683.430	546.610	439.900	292.620	509.650	189.700	653.890	1.630.560	2.789.040	3.081.950	2.381.220	177.240
Latvia				224.600	371.520	318.930	241.000	181.240	66.200	336.700	540.880	223.950	265.660	584.770	596.980	720.210	685.590	448.420
Lituania			1.498.140	1.521.680	989.290	2.470.110	1.670.010	648.540	928.290	2.446.560	1.163.600	351.820	428.290	779.210	872.940	5.495.100	3.460.790	1.639.010
Poland					3.461.270	4.153.200	4.807.150	3.104.750	2.082.900	2.233.530	2.185.700	1.977.360	2.387.100	2.775.710	2.580.990	3.778.900	2.895.750	3.252.590
Czech Republic				8.647.270	7.903.330	7.668.710	6.606.860	6.139.090	7.981.540	6.656.760	6.047.130	3.956.330	4.739.480	6.106.700	6.028.660	5.330.520	3.959.660	3.608.680
Slovakia		420.270	198.500	307.620	228.720	365.340	117.510	20.560	77.560	133.560	182.670	0	101.160	73.180	53.860	62.470	130.390	127.220
Hungary				1.589.410	9.444.640	5.748.580	2.444.520	1.857.090	2.107.910	489.240	270.950	104.170	209.100	122.490	61.330	266.040	81.580	91.040
Romania			2.336.940	5.190.420	6.091.030	2.509.950	2.613.260	2.519.050	3.764.310	1.816.240	817.700	324.760	206.600	2.299.460	753.080	1.524.240	1.340.660	1.169.450
Bulgaria				941.230	882.290	886.220	602.750	504.120	569.970	1.048.170	468.130	138.410	240.590	365.250	474.320	1.685.040	819.060	605.170
Slovenia				536.740	1.110.310	549.970	117.940	170.890	124.440	170.640	193.260	210.520	798.180	115.920	175.660	150.000	218.080	1.011.400
Croatia						2.601.200	1.819.200	3.098.030	2.900.620	3.184.370	1.497.020	1.458.720	1.286.630	1.959.830	1.282.740	1.076.280	716.060	456.670
Bosnia and Herzegovina																		
For. JRep. Macedonia																		
Montenegro																		
Serbia																		
EU15TOTALS	246.294.510	213.655.130	272.905.770	331.523.380	325.154.700	359.691.540	340.629.880	362.630.950										
EU25TOTALS						348.291.070	332.162.340	354.187.130	425.085.430	418.475.290	432.891.510	261.282.160	358.021.990	442.598.960	512.564.410			
EU27TOTALS						345.815.790	330.515.560	350.344.480	419.584.570	410.136.440	427.233.750	257.154.870	352.075.320	432.368.470	502.063.500	543.106.830	493.430.800	
EU28TOTALS						344.805.170	329.481.320	349.409.840	418.694.270	409.500.590	426.633.960	256.804.570	351.617.420	431.476.560	501.288.810	542.684.540	493.064.570	37.301.560
Cyprus						3.620	415.860	45.810	99.730	84.990	44.510	7.900	11.250	110.310	53.820	418.370	653.920	721.380

14201090 - Articles of furskin (excluding apparel, clothing accessories, hats and headgear)
14201030 - Articles of apparel and clothing accessories, of furskins (excluding hats and headgear)

Table 10

Import value

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
France	22.355.880	24.343.690	31.626.180	32.469.590	33.399.860	35.548.390	45.511.830	60.601.650	66.181.380	56.021.460	66.189.740	59.879.210	69.741.510	80.119.500	82.775.090	94.098.340	103.025.030	102.880.430
Netherlands	2.524.770	1.646.750	1.352.820	1.339.460	1.704.630	1.962.670	2.430.730	4.309.600	3.156.480	2.351.320	4.036.260	3.270.970	4.265.510	5.711.560	5.619.530	4.454.060	7.667.660	5.844.210
Germany	103.754.740	89.424.970	88.483.020	85.512.660	72.930.030	75.182.130	83.279.210	78.514.650	86.843.350	71.797.090	58.721.740	49.244.670	63.668.350	84.695.050	78.256.780	76.730.030	71.579.840	63.805.200
Italy	35.740.300	40.518.920	57.954.760	57.200.800	50.907.810	47.845.530	46.206.060	54.778.190	76.581.110	66.476.940	65.222.440	53.836.880	79.166.250	85.462.800	78.375.200	76.950.030	85.080.920	81.747.860
United Kingdom	6.209.580	7.754.250	8.893.750	9.227.400	12.136.350	17.166.720	15.691.710	18.783.220	14.005.950	12.494.210	12.999.500	13.868.270	17.557.750	23.768.020	26.837.930	34.490.870	41.223.330	45.202.960
Ireland	39.040	204.400	112.050	110.400	360	6.310	41.090	39.130	64.530	16.100	416.600	169.110	351.570	7.690	158.240	810	140	
Denmark	15.438.710	11.450.420	10.549.900	10.292.280	12.358.040	14.584.150	14.009.480	14.165.860	13.912.270	9.686.420	8.835.370	6.363.180	10.079.840	9.264.760	9.038.400	8.610.660	8.895.840	9.697.800
Greece	18.511.590	13.918.710	15.339.390	15.327.810	28.092.690	13.379.560	19.395.850	22.646.540	24.126.120	18.952.820	19.755.230	19.201.560	13.215.820	15.673.700	17.233.310	24.064.860	24.513.480	26.081.350
Portugal	1.698.250	2.024.960	2.487.090	2.745.610	2.933.400	2.785.430	3.562.880	4.822.080	5.438.840	3.726.550	3.607.980	2.631.040	4.121.130	2.941.850	2.937.660	2.922.140	3.142.370	3.475.650
Spain	18.327.060	30.847.750	43.145.930	40.267.920	31.930.270	23.892.750	33.689.800	46.688.720	48.930.250	30.085.030	25.216.020	24.096.830	36.781.480	27.498.530	25.947.680	22.314.770	23.266.600	22.387.720
Belgium	5.148.190	3.693.990	3.730.380	3.695.320	16.032.030	3.612.280	3.834.560	6.937.330	8.659.630	6.902.860	9.093.740	11.934.680	13.856.730	15.948.050	13.837.950	10.778.190	15.884.360	14.194.740
Luxemburg		1.223.680	882.020	904.010	1.041.500	1.227.350	1.267.600	1.071.790	1.113.400	819.470	821.000	888.140	962.390	1.322.920	1.297.980	1.087.580	1.319.350	877.770
Iceland																		
Norway																		
Sweden	7.130.070	7.306.420	6.781.940	6.632.860	4.035.060	6.653.360	5.281.040	4.869.990	6.282.000	3.673.210	3.874.090	2.151.300	3.285.360	5.198.440	5.752.460	5.291.190	5.174.020	6.713.540
Finland	2.672.630	2.663.790	2.845.620	2.701.900	2.567.780	3.686.390	3.042.180	2.770.260	2.615.250	2.804.550	3.676.740	1.465.720	2.132.990	2.232.060	2.137.740	3.520.230	1.487.340	928.340
Austria	14.597.530	14.002.490	14.156.320	13.422.560	13.215.060	12.423.440	12.070.770	17.454.280	21.896.170	16.879.530	14.893.870	11.787.640	14.706.040	13.588.720	16.528.970	16.486.160	17.322.140	17.175.790
Malta						45.580	39.210	80.460	62.520	75.290	106.260	34.440	14.870	19.980	39.730	17.660	10.120	23.910
Turkey																		
Estonia			226.370	242.190	540.620	892.460	766.300	1.802.730	1.630.160	1.161.300	667.010	458.120	693.620	802.010	2.941.030	4.641.640	5.645.670	704.080
Latvia				148.350	711.070	826.440	1.451.670	1.104.890	2.463.540	3.141.890	1.678.190	623.280	660.800	1.534.430	2.010.250	1.692.710	3.109.270	1.518.340
Lituania			710.030	589.260	1.272.590	1.886.600	1.405.570	1.901.350	3.075.270	4.167.540	3.557.240	1.252.600	2.737.340	2.822.010	2.552.890	2.264.330	3.218.820	1.625.500
Poland					352.090	2.357.130	4.045.830	2.522.820	3.563.930	5.550.040	5.340.970	2.473.620	3.839.460	5.222.470	3.882.280	4.238.190	4.555.470	4.164.800
Czech Republic				234.360	1.266.140	2.856.490	2.880.220	3.279.500	3.677.740	4.235.580	4.636.280	4.390.690	4.940.110	4.426.880	5.536.280	6.865.850	5.216.010	4.583.240
Slovakia		730.090	1.002.020	1.009.050	950.110	988.400	785.020	590.610	673.280	882.820	993.600	860.020	1.336.060	968.220	869.030	496.890	560.400	800.080
Hungary				443.280	541.150	832.340	2.836.810	723.790	675.440	234.560	1.160.920	165.370	337.270	1.708.130	2.089.520	2.304.600	3.858.870	3.244.850
Romania			762.260	1.143.450	2.890.450	4.417.320	3.797.390	4.987.920	7.953.910	7.782.980	5.346.290	3.853.460	5.223.480	8.907.720	10.086.040	7.602.910	8.037.770	5.512.270
Bulgaria				53.010	856.930	883.620	664.540	1.416.080	1.878.300	2.519.740	1.269.180	620.800	917.410	1.682.770	2.012.830	3.025.910	2.506.010	1.119.680
Slovenia				375.320	909.900	921.020	992.560	1.197.850	949.560	791.070	711.980	885.780	842.500	483.390	520.760	360.770	938.590	1.685.190
Croatia						818.330	751.110	990.590	630.350	612.510	685.650	484.530	424.780	643.940	513.490	445.730	516.660	532.480
Bosnia and Herzegovina																		
For. JRep. Macedonia																		
Montenegro																		
Serbia																		
EU15TOTALS	126.807.820	147.835.220	169.260.480	162.576.920	145.689.210	156.518.000	179.870.860	208.017.650										
EU25TOTALS						146.796.580	175.099.270	205.314.340	235.884.920	179.060.000	175.203.520	154.576.530	209.773.740	234.471.040	220.433.030			
EU27TOTALS						144.209.930	172.321.920	203.204.820	233.460.290	177.446.360	174.797.320	154.118.760	209.244.160	234.642.090	220.534.080	205.920.280	218.864.050	180.248.620
EU28TOTALS						142.326.960	171.638.950	201.130.620	231.647.070	176.173.470	174.027.020	153.021.580	208.796.030	234.314.890	220.493.560	205.826.460	218.419.410	35.535.960
Cyprus						608.510	715.760	813.080	541.280	1.256.590	1.759.120	1.843.620	2.550.620	2.596.050	4.643.230	4.580.230	5.454.960	3.077.430

14201090 - Articles of furskin (excluding apparel, clothing accessories, hats and headgear)
14201030 - Articles of apparel and clothing accessories, of furskins (excluding hats and headgear)

Table 11

Net export

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
France	-9.732.000	-11.276.120	-13.230.070	-10.161.630	-8.072.740	-7.961.090	-17.318.730	-25.276.920	-22.170.490	-13.709.030	-20.080.120	-10.120.580	-25.680.790	-27.106.570	-18.463.990	-17.794.050	-16.310.580	-11.305.160
Netherlands	-1.686.160	-933.710	-825.410	-590.540	-1.235.320	-1.181.500	-958.200	-1.724.700	-2.149.670	-1.299.310	-1.496.240	-1.137.470	-2.415.160	-2.850.460	-3.045.290	-1.093.800	-804.680	-1.453.490
Germany	-46.120.140	-39.663.140	-32.830.310	-23.150.200	-4.770.140	-10.258.580	-13.489.060	-5.147.310	621.550	-1.018.140	5.457.430	1.809.300	-441.000	-4.004.720	4.928.200	3.314.180	4.074.790	-10.336.030
Italy	51.966.540	30.293.910	51.172.710	75.244.220	96.016.950	88.658.770	93.435.130	110.592.120	128.764.970	127.961.250	127.448.090	68.862.140	91.287.450	148.428.870	201.855.370	268.820.180	242.038.730	258.637.890
United Kingdom	-1.357.320	-2.970.620	-4.742.640	-4.066.060	-5.374.460	-8.175.300	-8.352.740	-9.804.030	-4.533.370	-4.255.030	5.904.850	-2.706.890	6.845.090	-4.083.850	-10.178.710	-15.433.270	-20.707.950	-21.813.160
Ireland	92.550	-194.940	-104.880	-61.990	24.760	78.570	-16.670	-25.040	74.400	9.850	-343.750	-138.750	-340.060	4.410	-150.000	550	2.390	9.640
Denmark	-9.807.360	-6.846.120	-6.584.710	-6.161.310	-7.160.120	-9.324.550	-8.886.160	-8.647.950	-8.346.110	-5.191.660	-4.871.530	-1.355.970	-3.519.890	-1.443.920	-2.279.180	-3.426.000	-1.256.250	-990.600
Greece	199.179.210	164.500.180	179.026.160	230.488.160	165.503.890	218.967.880	194.297.220	192.627.760	226.334.720	217.144.530	224.340.960	128.454.260	179.619.560	197.879.850	217.344.790	196.862.200	174.402.730	100.011.200
Portugal	-1.619.850	-1.816.850	-2.340.240	-2.581.620	-2.503.670	-2.314.230	-3.333.490	-4.552.680	-4.921.350	-3.391.800	-3.327.370	-2.500.410	-3.513.700	-1.964.130	-2.353.050	-2.458.100	-2.782.830	-3.219.710
Spain	-13.565.940	-27.692.960	-36.041.730	-31.904.980	-23.838.500	-15.423.960	-23.251.630	-38.558.160	-39.856.160	-22.640.050	-17.509.520	-15.970.470	-29.142.780	-18.005.530	-14.845.370	-10.017.230	-10.994.830	-10.984.680
Belgium	-3.825.790	-2.815.590	-2.450.880	-2.350.260	-13.997.460	-2.201.210	-1.419.400	-1.327.370	-3.183.970	-1.371.630	-1.960.920	-2.296.410	-1.550.480	-2.387.760	-1.361.030	-2.131.600	-2.574.850	-1.239.330
Luxemburg		-1.066.070	-845.730	-823.150	-1.012.620	-1.168.230	-1.112.250	-924.430	-1.090.000	-794.160	-796.390	-853.250	-936.110	-1.300.220	-1.193.580	-997.190	-1.168.270	-740.350
Iceland																		
Norway																		
Sweden	-1.856.610	-1.149.600	-1.819.300	-3.444.440	272.180	-237.390	1.105.880	674.090	273.340	690.720	-889.100	-111.290	-412.620	-1.715.580	-2.941.050	-2.917.100	-1.197.420	-2.516.970
Finland	10.603.680	6.872.080	7.549.090	8.442.910	7.998.330	5.241.910	3.963.430	3.993.980	5.547.750	6.142.240	3.268.860	2.913.800	2.702.980	3.619.850	2.763.960	1.228.680	2.572.590	1.714.680
Austria	-8.847.260	-10.204.450	-10.414.280	-8.825.100	-7.604.490	-7.446.460	-7.513.550	-6.228.410	-6.449.710	-4.695.650	-6.852.080	-6.855.170	-9.167.090	-6.200.740	-7.021.340	-7.821.020	-9.419.870	-10.494.080
Malta								-14.530		-55.680	35.030	6.150	-11.780					
Turkey																		
Estonia			394.590	371.670	79.680	-166.390	-82.870	-1.256.120	-1.190.260	-868.680	-157.360	-268.420	-39.730	828.550	-151.990	-1.559.690	-3.264.450	-526.840
Latvia				-114.550	-339.550	-507.510	-1.210.670	-923.650	-2.397.340	-2.805.190	-1.137.310	-399.330	-395.140	-949.660	-1.413.270	-972.500	-2.423.680	-1.069.920
Lituania			788.110	932.420	-283.300	583.510	264.440	-1.252.810	-2.146.980	-1.720.980	-2.393.640	-900.780	-2.309.050	-2.042.800	-1.679.950	3.230.770	241.970	13.510
Poland					895.950	1.796.070	761.320	581.930	-1.481.030	-3.316.510	-3.155.270	-496.260	-1.452.360	-2.446.760	-1.301.290	-459.290	-1.659.720	-902.210
Czech Republic				52.040	6.637.190	4.812.220	3.726.640	2.859.590	4.303.800	2.421.180	1.410.850	-434.360	-200.630	1.679.820	492.380	-1.535.330	-1.256.350	-974.560
Slovakia		-309.820	-803.520	-701.430	-721.390	-623.060	-667.510	-570.050	-595.720	-749.260	-790.850	-820.320	-1.234.900	-895.040	-815.170	-434.420	-430.010	-672.860
Hungary				1.146.130	1.585.330	-68.590	-399.310	-453.870	-462.010	-157.050	-338.550	-157.160	-128.170	-1.585.640	-2.028.190	-2.038.560	-3.777.290	-3.153.810
Romania			1.574.680	4.046.970	3.200.580	-1.907.370	-1.184.130	-2.468.870	-4.189.600	-5.966.740	-4.528.590	-3.528.700	-5.016.880	-6.608.260	-9.332.960	-6.078.670	-6.697.110	-4.342.820
Bulgaria				-1.980	26.360	2.600	-61.790	-911.960	-1.308.330	-1.471.570	-801.050	-482.390	-676.820	-1.317.520	-1.538.510	-1.340.870	-1.686.950	-514.510
Slovenia				-55.370	200.410	-371.050	-874.620	-1.026.960	-625.120	-620.430	-518.720	-675.260	-44.320	-367.470	-345.100	-210.770	-720.510	-673.790
Croatia						1.782.870	1.068.090	2.107.440	2.270.270	2.571.860	811.370	974.190	861.850	1.315.890	769.250	630.550	199.400	-75.810
Bosnia and Herzegovina																		
For. JRep. Macedonia																		
Montenegro																		
Serbia																		
EU15TOTALS	119.486.690	65.819.910	103.645.290	168.946.460	179.465.490	203.173.540	160.759.020	154.613.300										
EU25TOTALS						201.494.490	157.063.070	148.872.790	189.200.510	239.415.290	257.687.990	106.705.630	148.248.250	208.127.920	292.131.380			
EU27TOTALS						201.605.860	158.193.640	147.139.660	186.124.280	232.690.080	252.436.430	103.036.110	142.831.160	197.716.380	281.529.420	337.186.550	274.566.750	206.911.150
EU28TOTALS						202.478.210	157.842.370	148.279.220	187.047.200	233.327.120	252.606.940	103.782.990	142.821.390	197.161.670	280.795.250	336.858.080	274.645.160	1.765.600
Cyprus						-604.890	-220.850	-698.220	-402.540	-1.026.230	-1.714.610	-1.811.280	-2.502.860	-2.445.530	-4.447.960	-3.817.330	-4.801.040	-2.356.050

6. Estimation of fur retail value

6.1 Introduction

Estimation of fur retail value is not as simple as it might be:

First, fur garments etc. are often sold in several different shop types: Normal fur shops, department stores, clothing stores, online shopping, etc. then, the total fur retail value is the sum of turnover in several different types of outlets.

Secondly, fur garments are often sold together with other products in the stores. The stores' total sales thus comprise of several different products (often leather products) and therefore, the total revenue cannot be used as an estimate of the sector's total fur retail value.

Third, fur skins can account for a larger or smaller part of the finished products. Fur skin as accessories are substantial in scale and it can obviously be difficult to price the retail value of these accessories (because they actually represent only a small part of the total value) and to identify them in the statistics (because they not classified as fur garments and accessories)

Fourth, in general, the availability of data to estimate the retail value of fur products on country levels is insufficient. National statistics do not include these data, and statistics from business organizations etc. are in general not sufficient and comparable. Retail statistics – on both national and international level – are not collected or published by national statistical institutions the same way as for example production, import and export statistics are collected and published.

6.2 Retail products and outlets

Fur retail products have become much more diversified:

Fur may constitute almost the entirety of the garments (fur jackets, fur coats, etc.). Fur skin can often only be part of the garment (accessories). Fur skins can also be used for non-apparel (bags, etc.). Finally the fur can also be used for key rings, etc.

Box 3 shows the diversity of applications that fur can have. It appears that fur skins can be used in many places, and that the final product classification may be very different. The examples also show that fur may represent a relatively small part of the total product – both in value and in size.

It emphasizes that it can be difficult to separate the value of fur in those composite products and that it therefore may be difficult to determine the total value of fur traded retail.

This diversification makes it difficult (if not impossible) to get an overview of the value of the final sales (retail value) in all applications for fur skins.

Retail stores and retail outlets in general are also changing and become more diversified. There are at least five different retail outlets:

Firstly, there are dedicated fur stores where fur clothing is the main product.

Box 3. Examples of diversification of fur products

Key chain

Accessories/ shoes

Bag

Pillow

Ear phone

Coat

Secondly, there are shops selling fur clothing with "similar" products like leather.

Thirdly, the fur clothing can also be purchased in normal clothing stores.

Fourth, fur skins as accessories is typically sold in completely different shops.

Fifth, there is an ever-increasing development of retail business by internet-shops. There are also internet stores that either specialize in the sale of fur clothing, or sell fur clothing along with other products.

Box 4 gives examples of different fur retail outlets.

When the sale of fur and fur products to end users is so fragmented and changeable, it becomes even more difficult to collect data and assess the value of total sales.

Box 4. Examples of different fur retail outlets

6.3 Model and mark-ups

As adequate official statistics are not available or sufficient, and as diversification of both products and retail outlets make it impossible to calculate the total retail trade, then other methods to estimate the retail value must be developed and supplemented.

One method is to calculate retail fur value based on the number of produced skins, the price of the produced fur skins and mark-ups. This method model has several advantages

• All fur products in the retail industry have raw skins as unique raw material. There is a clear correlation - a value chain - from raw skins to finished fur product in the retail trade.

• Mark-ups (the factor to be used to go from year to fur retail value) can be calculated and collected by store checks

• All raw fur skins end up as fur retail products. There is no other alternative use of raw fur skin.

• Using the mark-up-model covers all fur products regardless of product type, outlet type, etc. The factor/mark-up is expected to be valid for all raw (or dressed) skins, and then the retail value of all skins – regardless of its final use – is included.

The model takes production of raw fur skin as a starting point – and then we move forward in the value chain. This "forward integration approach" ensures some consistency of both model, data and results.

The model must be used for all individual countries, and finally all results can be collected in a global database. The model can easily be updated each year, as the mark-ups are expected to be rather constant year by year.

Mark-ups can be determined by local reporters from each (major or significant) country. Special countries (with no local data supplier, with reliable fur garment retail value, or countries with non-transparent markets e.g. China) can be treated separately.

Mark-ups are expected to be rather identical for similar countries. However, methods to estimate coefficients can be described. Calculation of fur skins per fur garment can be used: If one fur coat demands for example 25 fur skins, and if the price of both coat and raw (or dressed) fur skins are available, then the factor or mark-up can easily be calculated. The factor/mark-up is expected to be valid for all raw (or dressed) skins, and then the retail value of all skins – regardless of its final use – is included.

It must be assumed that the retail prices, values and profits in the fur value chain will change when there are dramatic changes in the prices of raw skins. Mark-ups will adapt and change, when the prices of raw skins differ much from market balance. When the prices of raw fur skin increase very much, then the fur garments will not increase in price with the same percentage. Double prices of raw fur skins will not result in double prices of fur garments.

For that reason the global fur retail value is estimated on the basis of variable mark-ups. It is assumed that the market was in balance in 2010, that the mark-ups in the following years were variable, and that the increased value in subsequent years primarily was a result of an increasing supply of raw skins.

6.4 Empirical estimations of mark-ups

Estimation of mark-ups is crucial for the final estimation of the fur retail value. As mentioned in chapter 5.2, there are several ways to estimate the mark-ups. In this case fur industry organizations in different countries have been asked about mark-ups, and their answers have been used. Also interviews with people in the business have been useful sources. Finally also counting the number of fur skins per fur coat gives input to calculate mark-ups.

Results are shown in table 12.

Estimation of mark-ups – and estimation of the variability of mark-ups – can currently be studied more precisely in the future. Inputs from fur organisations etc. have also be used to improve the quality of data input.

Table 12. Estimated mark-ups from different countries

	S	CH	I	Ice	Slk	China	DK
Average retail price mink coat (USD):	5000	12500	3500	7000	4000	3000	
Average numbers of mink skins per coat (USD)	50	50	21	30	27	22	
Farmer price per skin (USD)	33,6	33,6	33,6	33,6	33,6	20	
Mark-up	3,0	7,4	5,0	6,9	4,4	6,8	6-7

Source: Inputs from fur industry organisations in different countries, Chen (2013) and Hansen (2016)

Information about the fur value chain, fur markets and fur prices has also been obtained from Yves Salomon, Paris. The company produces and sells fur garment at retail level through retail shops in several countries.

The company regards itself as a fashion company more than a fur manufacturing or fur selling company.

In the 1980s there were about 5.000 fur shops in France, and today the number has fallen to about 100.

The company has made three important strategic choices:

1) Development of strong brand

2) Work shops in various countries

3) Export.

The development - and the sustained strengthening - of the brand has been the most successful driver behind the expansion and the competitiveness of the company. The company also produces fur garments for private labels.

Mr. Salomon underlines, that the fur market is changing, so that the traditional fur shops are being more and more supplemented by fashion shops, mixed shops, except in China, Korea and Russia. Also the traditional fur jackets and fur coats will more supplemented by fur accessories, fur trimmings and mixed and match fur items etc. The change is moving from Europe and North America to Asia.

In table 13, the cost and price ratios and calculated mark-ups are presented. The mark-ups from dressed fur skins to retail sale for the European market (high prices) are about 6-7, and the average mark-ups (including the Chinese market) are 3,0-3,3. Other studies show, that if mark-ups from auction sales are included (including fees, transport, tanning and dressing), the mark-ups must be multiplied by a factor of 1,3.

Mark-ups for design fur garments are much higher, but they account for only about 1 per cent of the market.

Table 13. Cost and price ratios and coefficients (mark-ups) for different types of fur garments

Type of fur garment	Price (Euro)	Number of skins being used	Value of dressed mink skins	Coefficient
Coat, average	5.000	30	1.500	3,3
Coat, low price	1.500	30	1.260	1,2
Coat, high price	15.000	30	2.150	7,0
Jacket, average price	3.000	20	1.000	3,0
Jacket, low price	1.000	20	840	1,2
Jacket, high price	7.000	20	1.250	5,6

Note:
The value of dressed mink skins includes wholesale fee, dressing and transport

The low price jackets and low price coats are only sold on the Chinese market, and Chinese companies are working with very low profit margins

Source: Salomon, Yves (2017)

Information about the fur value chain, fur markets and fur prices has also been obtained from Philippe Beaulieu, president of the French Fur Association. The major results are presented in table 14.

Table 14. Prices and mark-ups from raw fur skin to fur retail sale. All values in Euro. Spring 2017. Estimated by Philippe Beaulieu, president of the French Fur Association

Raw mink skin price, average of male and female (45 and 38) =	42
Auction costs: x 1,1 =	4
Transport:	1
Dressing and trimming:	5
= price of dressed and trimmed mink skin:	52
Transport	1
Production cost :	10
Transport:	2
Total cost:	65
Total skins used:	15
Total cost of all skins (15 x 65):	975
Wholesale margin: x 1,7-2 (1,85 x 975):	1.800
Retail margin: x 2,6-3: (2,85 x 1.800)	5.130
15 raw mink skins (15 x 42):	630
Final mink garment (15 skins):	5.130
Mark-Up: (5.310/630) (incl. 20% VAT)	**8**

Source: Beaulieu, Philippe (2017)

The calculations are based on fur skins bought at Kopenhagen Fur in spring 2017, dressed and trimmed abroad and processed in France and sold at retail level in France.

When it is design fur garment, then the mark-up is much higher - up to 20.

The estimates are assumed to be valid for the fur industry in general in France.

The mark-ups (in per cent) are rather constant during periods with changing raw fur skin prices.

The recent 40 years have been characterized by continuing decline of French fur retail business.

Today, around 20 fur retail stores are left in France with a total turnover of about 45 million Euro per year. In addition to that, fur garments and fur accessories are sold in “ready to wear”-shops, “mixed shops”, fashion stores etc.

:

An increasing part of processed fur skin at retail level is sold as “accessories” etc. (See also box 3). Mark-ups for such products will depend on the importance of the fur skin in the final product. In this project only products with a significant fur skin share of total value are considered.

An example is key chains - here produced by Oh! By Kopenhagen Fur.

Figure 12. Fur accessories: Fur key chain produced by Oh! By Kopenhagen Fur

In this key chain fur skin is the major input and raw material. Based on retail prices, inputs etc. from Oh! By Kopenhagen Fur (2017) mark-up for such a product can be calculated to 12,5.

Oh: By Kopenhagen Fur produces other kinds of fur accessories, and mark-ups will depend on the share of fur skin of the final product. However, the fur key ring is a typical product, and similar products are expected to have mark-ups in the same order of magnitude.

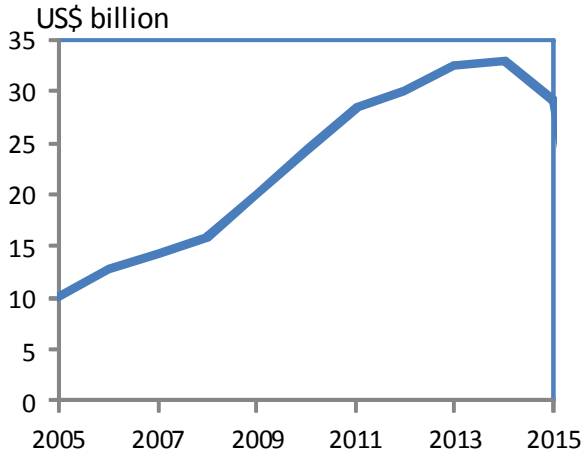
Accessories with a lower content of fur skins will - ceteris paribus - have higher mark-ups, but fur skins will then only create a minor part of the final value. As a mark-up around 12,5 can be assumed to represent accessories with a high content of fur skins, then using this mark-up gives a fair and general picture of the value that fur skins create within the product group of accessories.

7. Global fur retail value

The global fur retail value can now be calculated based on production values of raw fur skins, based on mark-ups, and based on a number of assumptions described in previous chapters.

The turnover from world fur retail 2005-2015 is shown in figure 13.

Figure 13. Global retail fur value 2005-2015



Source: Own calculations based on data from figure 2 and 11 and table 15.

The figure shows a significant increase until 2013, and a decrease after 2014.

The development is driven by a number of factors:

*Increasing amount of produced and marketed fur skins (2010-2014) - increasing volumes

* Increasing prices (2010-2014)

* Economic drivers (purchasing power, financial crisis, trade barriers etc.)

* Climate (cold or warm winters)

* Supply driven factors, through incentives to strengthen domestic production

* Establishments of new retail outlets

* Legislation

* Product and market diversification, where new segments are developed

The value of fur retail in major countries and regions is shown in table 15.

Table 15. Value of fur retail sale in major countries and regions, 2010-2015

	2010	2011	2012	2013	2014	2015
USA	1,3	1,5	1,3	1,2	1,5	1,4
Canada	0,3	0,3	0,3	0,3	0,3	0,3
Russia	3,4	3,8	4,0	4,1	3,6	2,2
China	10,7	13,7	15,1	17,0	18,6	16,9
Europe	6,8	7,0	7,5	8,0	7,3	7,0
Other	1,9	2,0	2,0	2,0	1,9	1,9
Total	24,3	28,3	30,1	32,5	32,9	29,1

Source: Own calculations based on data from table 4 and figure 4-7.

It should be noted that data in table 15 are the result of several hundred inputs, and that updates and revisions of these data are ongoing.

8. Fur retail values for individual countries

8.1 Introduction

Information about fur retail sale from selected countries is collected and presented. While the mark-up model can give reliable retail results on a global level (where uncertain import and export figures are eliminated), lack of data can in some cases cause, that the mark-up model cannot be completely and solely used on national levels.

For that reason – and to supplement and check data based on mark-up-models – fur retail data are collected from other sources, such as official statistical databases (if they may exist), industry reports (if they can be verified, substantiated or documented) and interviews with people in the fur business.

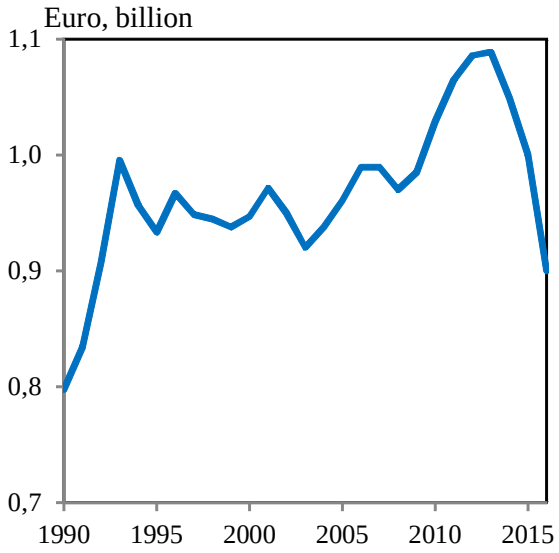
8.2 Germany

The German fur industry consists of a number of different companies, plants and units in the value chain. In this context, the primary production of fur skin on farms and directly related industries are ignored while focus is on the downstream activities in processing, trading, distribution and retailing.

Table 17 illustrates the present structure and size of this fur industry in Germany. Both companies and employment are significant along the value chain.

Deutsches Pelz Institut has also for several years collected data about the total turnover from fur retail industry. The turnover from 1990 to 2015 is shown in figure 14.

Figure 14. Total sale (turnover) from fur retail industry in Germany1990-2016



2010	2011	2012	2013	2014	2015	2016
1,029	1,065	1,086	1,089	1,049	1,000	0,900

Note: 1990-1998: ECU exchange rate used to convert from D-Mark to Euro. 2016: Estimate

Sales include non-fur products. The industry does not count sales according to sources.

Source: Own calculations based on Deutsches Pelz Institut (2016 + 2017)

Table 17. Structure and size of the fur industry in Germany

	Companies	Employment
Fur wholesale suppliers, commission agents, fur finishers, fur apparel manufacturer	200	1.200
Furriers businesses as traders	475	2.000
Other specialized fur retail (without workshop)	250*	1.400*
Fashion / clothing retail with fur in assortment	11.000*	

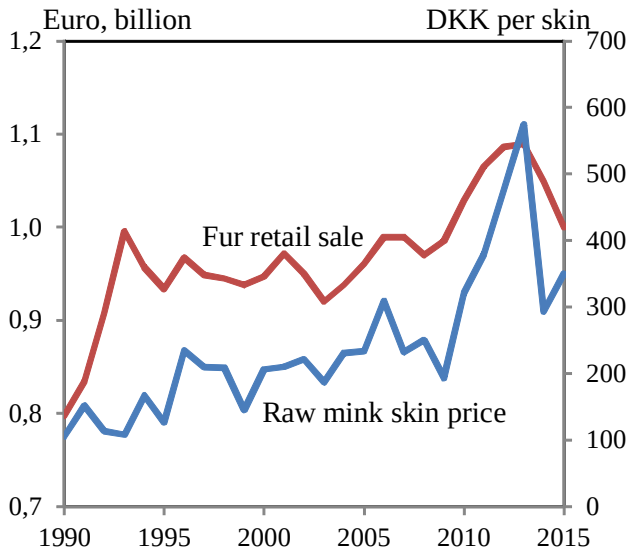
* Estimates

Source: Deutsches Pelz Institut (2016) - partly based on Zentralverband des Kürschnerhandwerks

The figure shows an increasing trend during the period, and the level has been close to 1 billion Euros per year. However, since 2013 there has been a major decrease, and a decrease of about 8-10 per cent in 2016 is expected.

As mentioned, the turnover includes non-fur products, but because of the classification of the outlets, it is assumed that fur products account for a major part of the turnover. Figure 15 also confirms that fur products probably account for a significant part of the turnover:

Figure 15. Sale from fur retail industry in Germany and price of raw mink skin 1990-2015



Note: 1990-1998: ECU-rate used to convert from D-Mark to Euro.

Sales include non-fur products. The industry does not count sales according to sources.

Source: Own calculations based on Deutsches Pelz Institut (2016) and Kopenhagen Fur (2016).

Figure 14 shows both the sales from fur retail industry in Germany and the price of raw mink skin. There seems to be a clear correlation, and this may be explained by the fact, that raw fur skin is an important input cost in the fur manufacturing industry and by that also in the fur retail industry. The clear correlation may then indicate that fur garments are a major part of the sale from the fur retail industry.

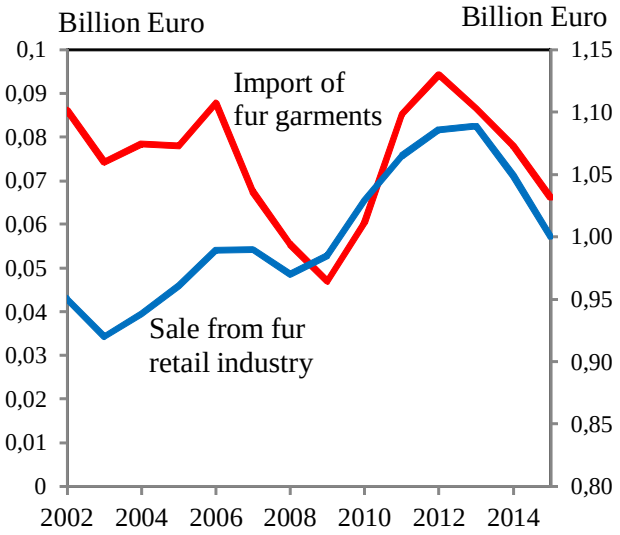
The clear correlation between retail sale and fur skin prices is spectacular, as a number of factors other than fur skin prices will influence fur retail sales: The weather is a significant factor (Deutsches Pelz Institut, 2016), but also economic cycles, purchasing power etc. are significant factors.

As described previously, fur garments and fur accessories are also sold in other categories and other type of outlets, which are included in the turnover shown in figure 14 and 15. Fur skin accessories, bags with fur skin etc. are examples. However, these products are very difficult to identify fully and to quantify, so it will just be noted, that data for fur skins used for fur garments in retail stores will probably underestimate the real and total retail value of all fur skins.

Germany has a significant import of fur apparel and clothing. In 2015 the import was 73 million USD (66 million Euros). 48 million Euros was “Articles of apparel & clothing accessories of furskin”, while the remaining 18 million Euros was “Articles of furskin except clothing and accessories”.

During recent years German imports of fur apparel and clothings has followed the same trend as the registered data for sale from fur retail industry - see figure 16.

Figure 16. Total sale (turnover) from fur retail industry in Germany and Germany's import of fur garments, 2002-2015



Source: Own calculations based on Deutsches Pelz Institut (2016) and UN (2016)

Germany's import of clothing, accessories and other articles of furskin comes mostly from China, but also European countries like Italy and Greece are important - see table 18.

Table 18. Germany's import markets of clothing, accessories and other articles of furskin (2015)

Country	Per cent
China	34,8
Italy	12,9
Greece	10,2
Turkey	9,9
Viet Nam	8,7
Philippines	5,6
France	3,0
Hong Kong	1,9
Other	13,1

Source: Own calculations based on UN (2016)

8.3 UK

Fur retail data in UK is not registered or collected systematically by any public authority, so there are no official statistics.

As there is no fur skin production in UK, all skin products – raw skin, dressed skin and fur garments – are imported. However, fur garments are also produced in UK based on imported fur skins.

Statistics about "sold production value in fur manufacturing industry" can be used to verify or substantiate fur retail sale coming from domestic production and not from import.

Data for fur retail sale for UK can be calculated based on fur manufacturing statistics and/or import/export of raw fur skin, tanned and dressed skin and fur garments.

Statistics about "sold production value in fur manufacturing industry" can be used to verify or substantiate fur retail sale coming from domestic production and not from import.

Eurostat publishes fur manufacturing statistics, but only companies with more than 20 people employed are covered. The statistical data must then be multiplied with a factor dependent of the share that companies with more than 20 people employed cover.

Table 19 shows sold production value from fur manufacturing industry in UK in recent years.

Table 19. Sold production value from fur manufacturing industry in UK (USD)

	>20 employed	Total* (5%)	Total**(15%)
2010	876.620	17.532.400	5.844.133
2011	834.217	16.684.340	5.561.447
2012	1.125.951	22.519.020	7.506.340
2013	1.487.177	29.743.540	9.914.513
2014	-		
2015	1.226.166	24.523.320	8.174.440

Note:
14201090 - Articles of furskin (excluding apparel, clothing accessories, hats and headgear)
+
14201030 - Articles of apparel and clothing accessories, of furskins (excluding hats and headgear)

Data includes only companies with > 20 employed

Total* (5%): > 20 employed = 5% of all
Total** (15%): > 20 employed = 15% of all

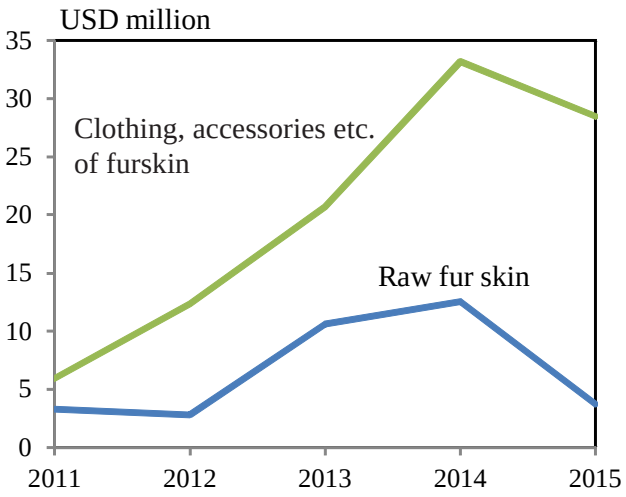
Source: Eurostat (2016)

The table also contains estimates based on assumptions about the share of production value coming from companies with more than 20 employed. However, as the share of production value coming from companies with more than 20 employed is expected to be rather low (based on market information from UK), up-scaling by multiplying with a factor incurs additional uncertainty.

Another method is to calculate the value of raw fur skin, tanned & dressed skin and fur garment being available on the market in UK. Assuming that stocks are less important (and the influence of stocks will be eliminated over time), then the available fur products = net import (import minus export).

Net import in UK during 2011-2015 is shown in figure 17.

Figure 17. Net import of raw fur skin and of clothing, accessories etc. of furskin in UK

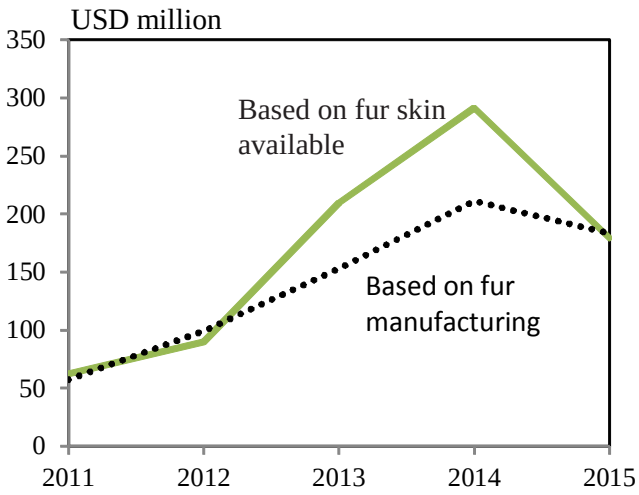


Source: Own calculations based on UN (2016).

The net import of tanned and dressed fur skin is not included, as it is negligible in the period.

Based on mark-ups from raw fur skin to retail, and from import to retail, fur retail sale in UK can be estimated. See figure 18.

Figure 18. Estimated fur retail sale in UK, 2011-2015



	2011	2012	2013	2014	2015
Fur available	62	90	210	291	179
Fur manufacturing	57	99	153	211	183

Note: Assumptions:

> 20 employeed:	15%
Mark-up: Raw -> retail:	10
Mark up: Manufacturing -> retail:	5
Mark up: import -> retail:	5

Source: Own calculations based on UN (2016).

One method is to multiply mark-ups with raw skin and fur garments available on the UK market.

The other method is to use data for sold production from fur manufacturing companies with more than 20 employed and to upscale - and to add imported fur garments.

The figure shows, that the two different methods give similar results.

In both cases assumptions have been verified and substantiated by market players.

8.5 Russia

Right up until the early 1990s, Russia (Soviet Union) was regarded as the world's largest producer of farmed mink. In the late 1980s, the production of mink pelts was calculated at 10 million (Titova, 2003), while in 1993, production was estimated at about 12 million pelts, which equated to 36 percent of world mink production. According to Sojuzpushina (2013), the total number decreased subsequently, and in 2000, production had fallen to a total of 3 million fur skins, the majority of which were mink.

Based on Fur Auctions (2017), where skin production and/or herd size is registered, and based on assumptions about production per female, total farmed fur skin production can be calculated - see table 20.

Table 20. Production of farmed fur skins in Russia (2016)

	Number
Mink	2.052.000
Arctic fox	71.000
Silver fox	14.000
Fox	74.000
Sable	71.000
Raccon dog	4.000
Chinchilla	5.000
Fitch	30.000
Total	2.321.000

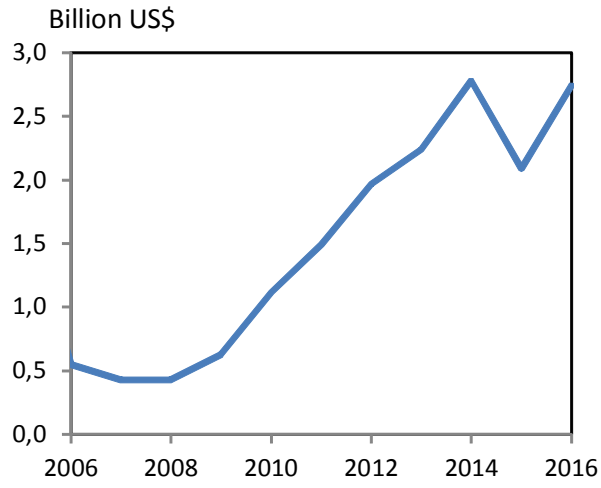
Source: Own calculations based on Fur Auctions (2017)

Russia is the World's biggest importer and net-importer of fur garments, so it will be crucial to include Russia, when fur retail sale in individual countries shall be measured and quantified.

In general, Russia is a major player on the international fur markets: As an exporter of fur skin, but mostly as an importer of fur garments. Several countries still have Russia as their most important export market for their fur garments. For countries like China, Greece, Turkey and Italy, Russia was the most important export market in 2015.

Countries export fur garments to Russia for 2,0-2,5 billion US$ per year, and there has been a steady increase since 2008 in spite of financial, economic and political crises, cf. figure 19.

Figure 19. Major countries' export of fur garments to Russia, 2006-2016



Note: 2016: Preliminary

Source: Own calculations based on UN (2017)

Data comes from the UN trade database COMTRADE, but the figure - especially for 2015 and 2016 but also for other years - must be interpreted with caution. Still, the trend seems to be reliable and consistent.

The Russian organization, Russian Fur Union, collects data for fur retail sale, cf. table 21.

Table 21. Russian annual fur garment retail sales, USD, billion

2012-13	4,5-5,0
2014-15	3,1-3,5

Source: Statistic data, based on marketing investigation of Russian Fur Union

The Russian Federal Statistics publish data about fur retail sale - see table 22.

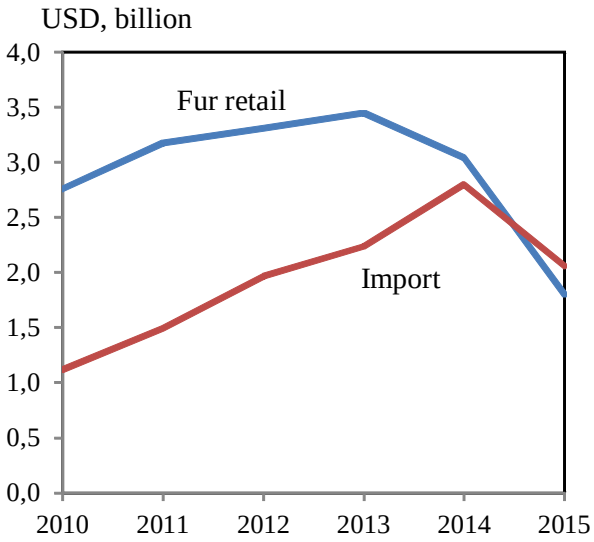
Table 22. Retail fur garments sales in Russia (billion)

	RUB	USD
2010	84	2,8
2011	93	3,2
2012	103	3,3
2013	110	3,4
2014	115	3,0
2015	110	1,8
2016*	41	0,7

* January-June
Source: Federal Statistics (2016)

The table shows an increasing trend in the beginning of the period, and a decrease in the latest years. The fur retail sales seem to follow the same trend as the import of fur garment - cf. figure 20.

Figure 20. Retail fur sales in Russia and Russian import of fur garments (billion)



Note: Import = other countries' export to Russia

	2010	2011	2012	2013	2014	2015
1)	2,8	3,2	3,3	3,4	3,0	1,8
2)	3,4	3,8	4,0	4,1	3,6	2,2

1) According to table 22
2) Final estimation

Source: Federal Statistics (2016) and UN (2016)

The figure indicates, that the two curves follow the same trend, although the retail curve may change faster than the import curve.

As the fur retail data also includes fur garments produced in Russia, as there are price mark-ups from import to retail, and as Russia also exports fur garments, it is obvious that retail figures are higher than import figures. The table below the figure then includes an estimate for Russian fur retail sale taking into account both Russia's significant import, and also results from table 21.

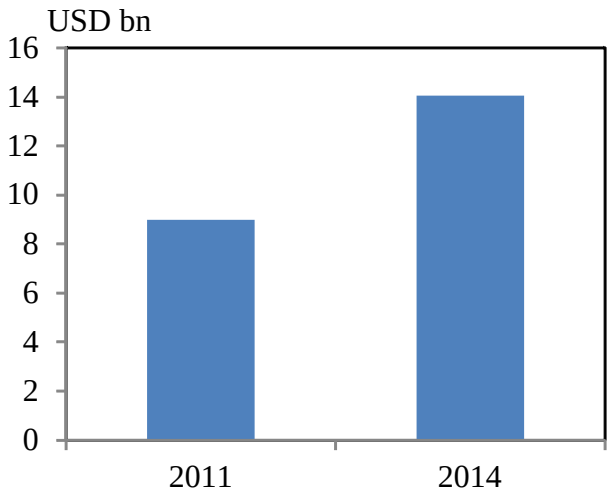
The Russian statistics about fur garment sales are under revision, and an upward adjustment is expected.

8.6 China

China is by far the largest and most important country in the global fur value chain. China is the biggest producer and exporter of fur garments and the biggest producer of raw fur skins.

According to Irinbank (2016) total sales from the Chinese fur industry amounted to 9 billion USD in 2011 and 14 billion USD in 2014. See figure 21.

Figure 21. Total fur industry sale in China

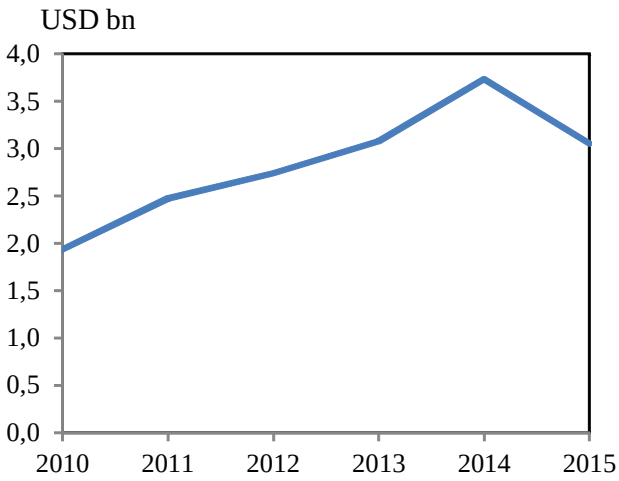


Source: Irinbank (2016)

According to Yanjie, Huang (2016) this represents the manufactured value and must be multiplied by 2 to represent a retail value.

A significant part of the Chinese fur industry sales is international sales - export. The Chinese export of fur garment (see figure 22) has been increasing, and it accounted for 27 per cent of the total fur industry sale in China in both 2011 and 2014.

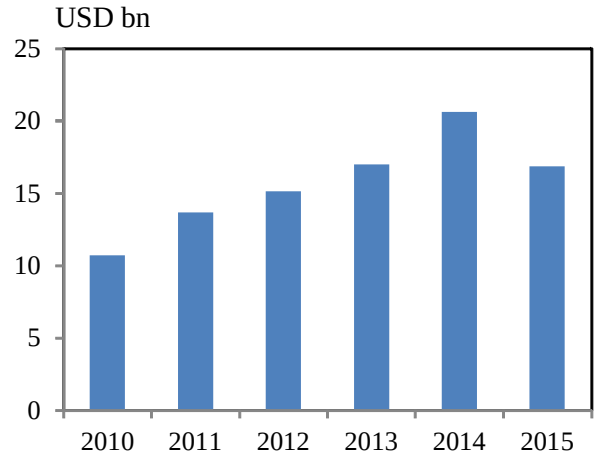
Figure 22. Chinese export of fur garments



Source: Own calculations based on UN (2016)

Assuming that this export sale/domestic sale ratio is constant in the period, and that retail sale = industry sale multiplied by two, then the fur retail sale in China can be estimated - and is shown in figure 23.

Figure 23. Chinese fur retail sale 2010-2015



2010	2011	2012	2013	2014	2015
10,7	13,7	15,1	17,0	18,7	16,9

Source: Own calculations based on data from figure 23 and 24.

The Chinese fur retail sale is then estimated as manufactured value (according to official Chinese statistics) multiplied by 2 and minus export. This gives an estimate for domestic retail sale.

8.7 USA

The US is the world's fifth largest producer of mink fur skins producing 3,75 million mink pelts in 2015. The value of pelts produced during 2015 was US$ 117 million, down 46 percent from US$ 216 million a year ago.

However, wild fur skins also represent a significant part of the total fur skin production in the US. Table 23 shows the production of wild fur skins in USA in 2015.

Table 23. Production of wild fur skins in United States (2015)

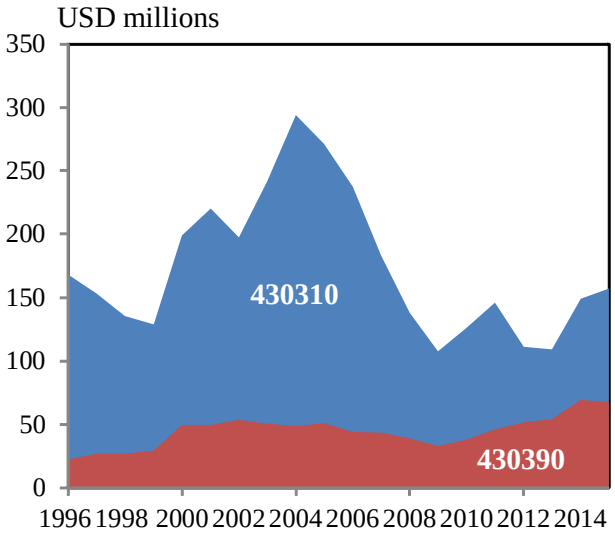
Type	Production Number	Avg value USD	Total Value USD
Arctic Fox	0	-	-
Badger	14.858	19,53	290.177
Bassarisk	172	-	-
Beaver	177.288	12,31	2.182.415
Bobcat	42.766	244,45	10.454.149
Coyote	409.040	50,91	20.824.226
Fisher	3.123	35,44	110.679
Fox, Gray	61.063	22,72	1.387.351
Fox, Kit	352	-	-
Fox, Red	116.982	18,34	2.145.450
Fox, Swift	457		0
Gray Wolf	1.045	169,73	177.368
Lynx	1.315	87,18	114.642
Marten	7.883	38,74	305.414
Mink	57.883	9,69	560.886
Muskrat	821.315	4,62	3.794.475
Nutria	4.005	1,75	7.009
Opossum	197.910	2,86	566.023
Otter	20.391	31,97	651.900
Raccoon	1.426.786	5,95	8.489.377
Skunk, Hooded	165	4,43	731
Skunk, Spotted	815	4,43	3.610
Skunk, Striped	104.372	4,43	462.368
Squirrel	11	0,54	6
Weasel	17.483	2,21	38.637
Wolverine	475	211,73	100.572
Total	**3.487.955**		**52.667.465**

Source: IFF based on data from USA

The table shows that about 3,5 million wild fur skins were produced and that the production value amounts to 53 million US$. This illustrates, that wild fur skins are important products in the fur value chain and that they also contribute to the fur manufacturing industry and to the fur retail industry.

Import of fur garments is a major source for the US fur retail industry probably the most important source. Annual import of "Clothing, accessories and other articles of furskin" has the value of about 150 million USD – see figure 24.

Figure 24. US import of "Clothing, accessories and other articles of furskin"



430310: Articles of apparel & clothing accessories of furskin
430390: Articles of furskin except clothing and accessories

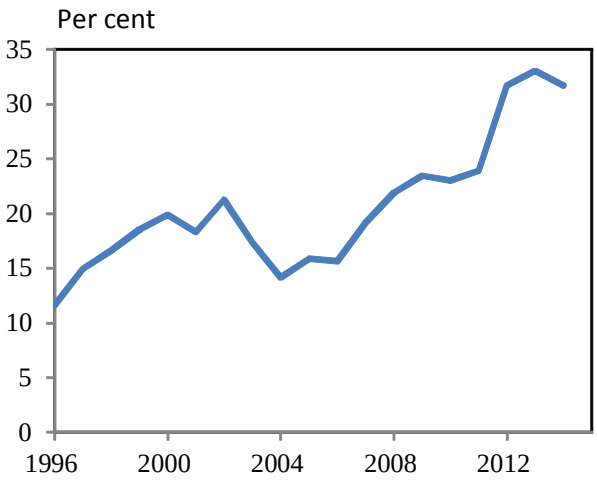
Source: Own presentation based on UN (2016)

The import product group is named "clothing, accessories and other articles of furskin", and it consists of two sub groups, "Articles of apparel & clothing accessories of furskin" and "Articles of furskin except clothing and accessories." SITC-code numbers are shown in the figure.

Almost 1/3 of the total import is now "articles of furskin except clothing and

accessories" indicating a more and more diversified use of furskin – see figure 25.

Figure 25. US import of "Articles of furskin except clothing and accessories" as a share of total "Clothing, accessories and other articles of furskin"



Source: Own presentation based on UNCOMTRADE (2016)

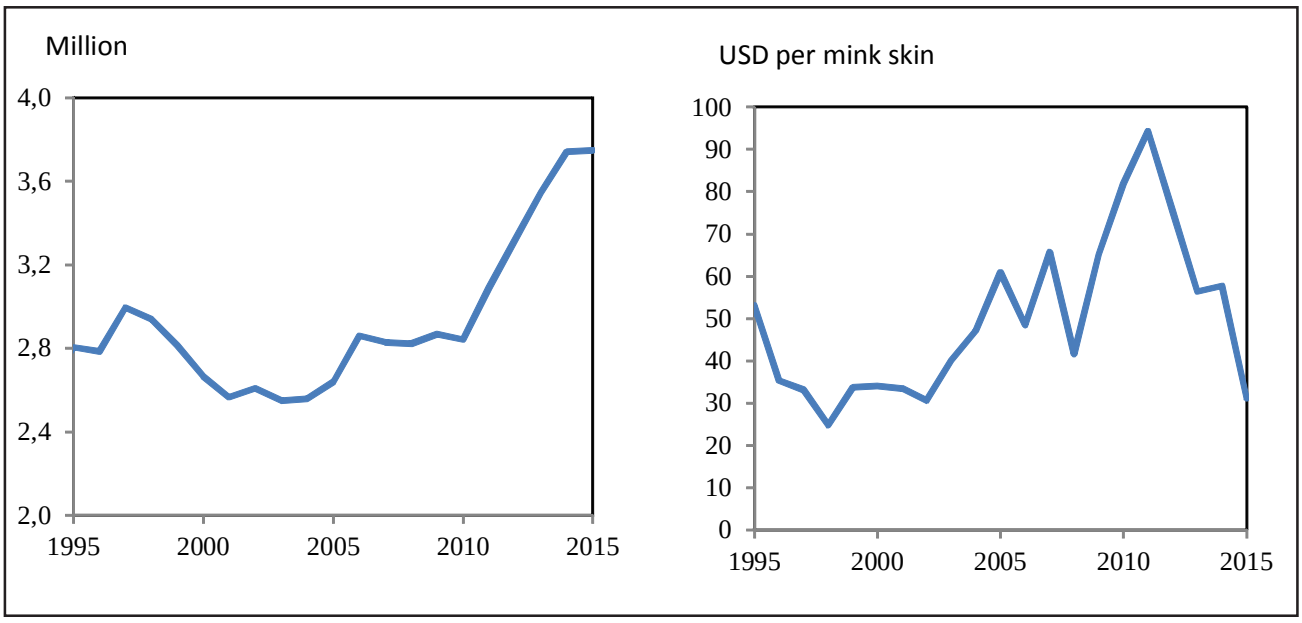
Own production of furskin in the United States is also a source for the fur retail industry. US production has increased during recent decades, while prices have been rather volatile – see figure 26. Combining production (million skins) with price (USD per skin) gives an increasing production value trend in the period. Production value has more than doubled in the period.

A major part of the production is exported, and production value and net export value seem to follow a similar trend – see figure 27.

Net export is around 85 per cent of production value. Considering added value from farm level to export level etc. it can be assumed, that 15 per cent of all mink skins produced in US is manufactured and sold at retail level in US. It is also assumed that this is also the case for other fur types.

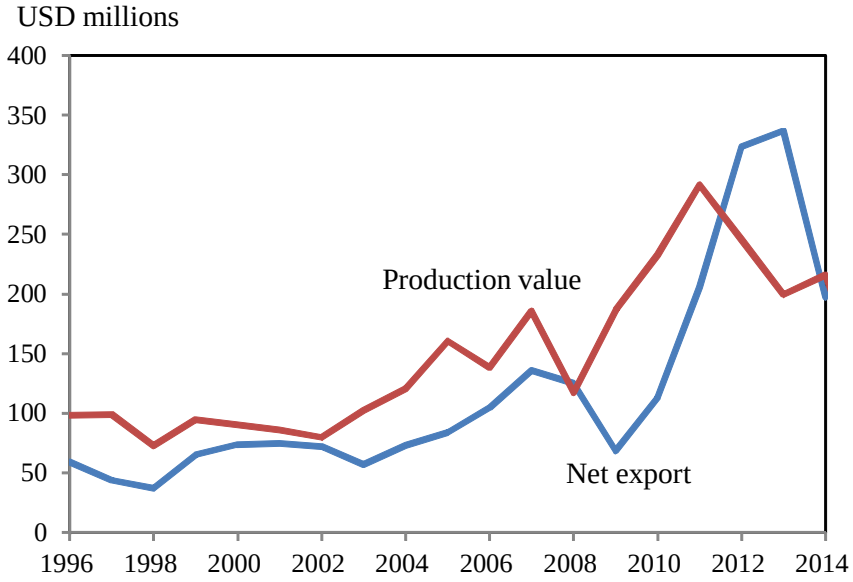
Based on US production of fur skins, export share, import of fur garments etc., mark-ups etc., US fur retail sale can be estimated. Figure 28 shows the estimated development 1996-2014.

Figure 26. Mink skin in US: Annual production and price, 1995-2015



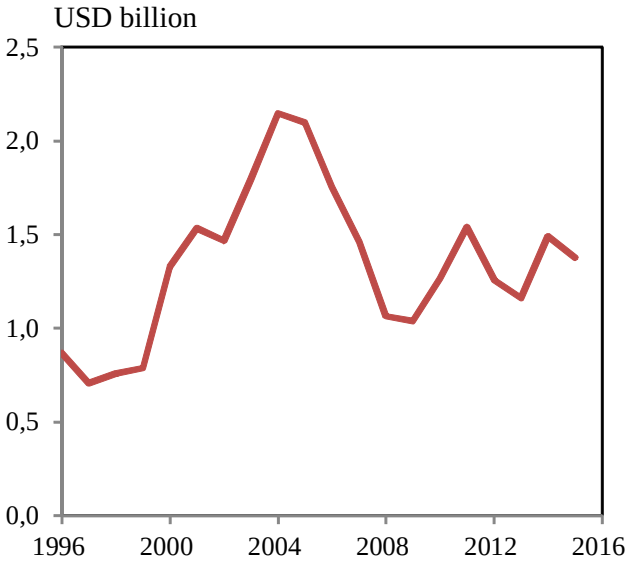
Source: Own presentation based on USDA (2016)

Figure 27. US production value of mink skin and net export of mink skin



Source: Own presentation based on USDA (2016) and UNCOMTRADE (2016)

Figure 28. US fur retail value - estimated based on mark-ups



Source: Calculations based on UN (2016) and table 3

2010	2011	2012	2013	2014	2015
1,27	1,54	1,26	1,16	1,49	1,38

According to the figure, the annual fur retail sale in USA is around 1,2-1,5 USD billion per year. The calculations of fur retail sale are based on mark-ups depend on certain assumptions:

* 85 per cent of fur skin production is exported. 15 per cent is processed and sold on domestic retail fur market.
* Mark up from raw fur skin to retail: 10.
* Mink skin accounts for 85 per cent of fur retail sale (= raw mink skin's share of total international trade of raw fur skin)
* Mark-up from import value to retail value: 6.

By using relatively high mark-ups, it is taken into account that other fur skins than mink and fox skins (wild skins) play a significant role in the US fur business.

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