

4.22 SWEDEN

4.22.1 General overview of the Swedish fish processing sector

The total number of enterprises operating in the Swedish processing industry increased from 301 to 356 during the period 2008-2015 if one includes both enterprises that process fish as their main activity and enterprises that do not. If you separate these two groups, the enterprises that process fish as their main activity increased from 214 to 224, which can be compared to 177 enterprises in 2001. This can also be compared to an increase by more than 50% for enterprises that do not process fish as their main activity. Please note that the rest of this chapter mostly concerns enterprises that have fish processing as their main activity, since we have almost no further data on the other enterprises.

The fish processing industry sector in Sweden is very heterogeneous with small family businesses processing their own landings as well as larger enterprises with large-scale industrial production. A majority of the companies, however, are small firms with less than 10 employees. Often only the owner is working in the company. A correlation between business size and diversification is to be expected, since smaller enterprises tend to specialise and larger enterprises produce a wider range of products.

The fish processing industry is located mainly along the west and south coasts of Sweden, as are major parts of the fishing fleet. Two regions stand out: the Sotenäs municipality and the county of Halland. In these coastal areas the processing industry is an important source of employment, particularly since other employment can sometimes be hard to find there. Several Swedish companies have merged with foreign ones during the studied period, for example from Norway and the United Kingdom.

The Swedish processing industry produces a wide range of fresh, chilled, canned and frozen products. The products produced by the largest companies are mainly based on herring, whitefish, prawn and roe, but also cod, salmon, Alaska Pollack and Pangasius are important raw materials. The products produced differs from one part of Sweden to another. In the northern part it is mainly vendace roe, fermented Baltic herring and some salmon that are processed. The west coast produces mainly sandwich caviar, caviar, sprat/anchovies and canned products like fishballs, mackerel and herring, but also shellfish in brine and smoked salmon and rainbow. The south of Sweden mainly processes herring, Baltic herring and cod from the Baltic Sea, but also some smoked fish. On Gotland there is mainly local processing of Baltic fishing (including smokers).

In recent years, the processing rate has increased since demand has moved towards products that are almost ready to eat. At the same time, less whole fish is being sold. To be able to compete on the market the Swedish fish processing industries, especially the larger enterprises, are very dependent on raw material of the right quality and quantity. They therefore import approximately three quarters of their raw material.

In 2015, a total of 224 enterprises had fish processing as their main activity. Many of the small companies were financially connected to the fishery operations, since they often processed their own landings. During the period 2008-2015, on average, 84% of the enterprises had less than ten employees which can be compared to 82% in 2008. The total number of employees was slightly higher in 2015 compared to 2008 (2,171 compared to 2,165). There was a drop in total number of employees in 2009, and the number of employees has in fact increased every year until 2014, when one of the largest fish processing companies in Sweden merged and changed their activity from main to non-main. With this in mind it is very likely that the total number of employees has continued to increase, if you exclude this company from previous years. The decrease in labour productivity in 2013-2015 is also very likely due to the fact that one of the larger fish processing enterprises changed their activity in 2013. This company is included in the statistics for main activity for some months in 2013, but after that the enterprise is only included in enterprises in which fish processing is not their main activity.

In 2015, total FTE in the Swedish processing industry was 1,662 which was a decrease by 6% compared to 2008. The fact that FTE is lower than the total number of employees indicates that several employees are working full time or more hours.

Table 4.22.1: Swedish fish processing sector overview, 2008-2015

Variable	2008	2009	2010	2011	2012	2013	2014	2015	Δ (2014-15)	Δ (2008-15)
Structure (number)										
Total enterprises	214	217	219	219	223	222	224	224	0%	5%
≤10 employees	181	186	183	186	190	185	188	183	-3%	1%
11-49 employees	26	26	30	26	25	29	28	33	18%	27%
50-249 employees	7	5	6	7	8	8	8	8	0%	14%
≥250 employees										
Employment (number)										
Total employees	2,165	1,991	2,007	2,126	2,135	2,199	2,174	2,171	0%	0%
Male employees	1,187	1,116	1,112	1,202	1,215	1,245	1,256	1,283	2%	8%
Female employees	978	875	895	924	920	954	918	888	-3%	-9%
FTE	1,773	1,736	1,807	1,837	1,831	1,658	1,587	1,662	5%	-6%
Indicators										
FTE per enterprise	8.3	8.0	8.3	8.4	8.2	7.5	7.1	7.4	5%	-10%
Average wage (thousand €)	43.9	39.3	45.4	48.3	50.2	48.5	45.8	45.0	-2%	2%
Unpaid work (%)	1.3	2.8	0.0	0.0	0.0	0.0	0.0	0.0	0%	-100%

Note: The data covers 3 segments, since the data in the third segment includes firms with more than 50 employees.

FTE development can only be studied on an aggregated level, since no data is available by gender. However, between 2008 and 2012 total FTE increased by 8% which can be compared to a decrease by 1% in total employment. The development between 2014 and 2015 is almost the same, with an increase in FTE by 5% and an unchanged total number of employees. This development might be explained by the fact that more employees are working part time, and the increase in average wages may also have an impact.

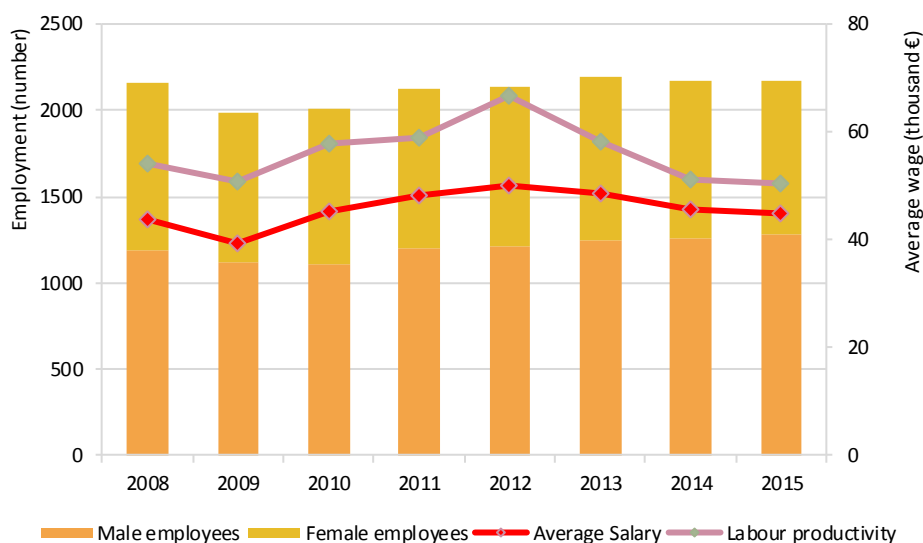


Figure 4.22.1: Swedish employment trends, 2008-2015

As shown in Figure 4.22.1 the average wage level has a positive trend during the period and increased by 2% in value, which is slightly higher than the increase in Sweden as a whole. The decrease in 2009 is mainly due to changes in exchange rates, since the Swedish krona was weak. The exchange rate also effected the average salary after 2013, since the Swedish krona became weaker compared to the euro. The total number of employees was slightly higher in 2015 compared to 2008 (2,171 compared to 2,165), which can be compared to a decrease in FTE with 6% during the same period. During the studied period the total number of male employees increased by 8% and at the same time the total number of female employees decreased by 9%. Figure 4.22.1 also shows that labour productivity increased between 2008 and 2012, and decreased after the merger and during the studied period by 7%. This decrease can be compared to an increase by 2% for average salary. Worth mentioning again is that the number of enterprises increased during this period.

4.22.2 Economic performance of the Swedish fish processing sector

The performance of the Swedish processing industry is highly dependent on the prices of raw material, which amounted to more than 60% of total production costs during the studied period. The industry is also dependent on raw material of the right quality and quantity. If such materials cannot be found within the Union the industry has to import it from third countries. Generally speaking, smaller enterprises are more dependent on local landing, and larger enterprises with industrial production depend more on imported raw material. Therefore, in addition to variations in the prices of raw material, the industry is also sensitive to fluctuations in exchange rates.

When the economic performance is evaluated for the studied period, one must bear in mind that economic data at national level refers to the main activity of the entire company or business group. One of Sweden's largest fish processing industries merged with another industry in 2013 and their activity changed from main to non main fish processing activity. The relevant enterprise is included in the statistics for some months in 2013, but after that they are not included at national level when it comes to fish processing as main activity. The consequence is that it is difficult to study the development and trends of the economic performance between 2008 and 2015. It would probably be more relevant to study the development 2008-2012 (which was done in the last report, STECF-14-21) and the development 2014-2015.

As shown in Figure 4.22.2 both EBIT and GVA are low since income (especially turnover) has not increased at the same rate as costs (especially other operational costs). However, the figure also shows that the purchase of fish and other raw material without question is the largest expenditure for the Swedish fish processing industry. The development of the different indicators is shown in Table 4.22.2.

Please note that the development of the economic performance (Table 4.22.2) would be different if it was presented in Swedish krona, especially for the year 2009 when the Swedish krona was weak¹⁹.

For example, if you compare the turnover in 2008 and 2009 it was at a similar level in Swedish krona, but decreased by 10% when presented in €. During the same period the costs of raw material increased by 11% in krona, but were almost the same when expressed in €. When you compare the evaluation for the turnover between 2008 and 2015 it decreased by 4% in Swedish krona, but by 1% expressed in €. The situation is much the same as regards the cost of raw material; in Swedish krona it increased by 11% between 2008 and 2015, but by 14% expressed in €.

The development (2008-2015) of the Swedish economic performance of the fish processing sector is shown in table 4.22.2. Beneath the table the most interesting variables are commented.

¹⁹ The exchange rates used in this chapter are for €1: SEK 9.6055 in 2008, SEK 10.6213 in 2009, SEK 9.5413 in 2010, SEK 9.0355 in 2011, SEK 8.7053 in 2012, SEK 8.6494 in 2013, SEK 9.0968 in 2014 and SEK 9.3562 in 2015.

Table 4.22.2: Swedish economic performance of the fish processing sector, 2008-2015

Variable	2008	2009	2010	2011	2012	2013	2014	2015	Δ (2014-15)	Δ (2008-15)
Income (million €)										
Turnover	519.8	467.2	567.5	599.4	613.2	542.0	499.8	512.5	▲ 3%	▼ -1%
Other income	3.7	3.6	3.9	3.4	8.7	13.6	4.2	4.6	▲ 9%	▲ 24%
Subsidies	0.3	0.3	0.5	0.5	0.8	1.0	0.5	0.3	▼ -38%	▲ 22%
Total Income	523.8	471.1	571.9	603.3	622.7	556.6	504.6	517.4	▲ 3%	▼ -1%
Expenditure (million €)										
Purchase of fish and other raw material for production	271.9	272.8	327.1	360.8	358.6	342.3	313.2	309.3	▼ -1%	▲ 14%
Wages and salaries of staff	76.8	66.4	82.0	88.8	92.0	80.4	72.6	74.8	▲ 3%	▼ -3%
Imputed value of unpaid labour	1.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	■ 0%	▼ -100%
Energy costs	7.4	6.5	8.5	7.6	6.4	7.9	7.0	6.3	▼ -9%	▼ -14%
Other operational costs	148.3	103.6	130.9	126.0	134.5	108.7	102.9	117.7	▲ 14%	▼ -21%
Total production costs	505.4	451.1	548.6	583.2	591.5	539.3	495.7	508.1	▲ 3%	▲ 1%
Capital Costs (million €)										
Depreciation of capital	12.3	10.5	12.5	12.7	13.3	11.9	9.7	9.7	■ 0%	▼ -21%
Financial costs, net	0.8	-0.1	0.6	-1.7	5.3	2.3	48.7	5.6	▼ -89%	▲ 596%
Extraordinary costs, net	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	■ 0%	■ 0%
Capital Value (million €)										
Total value of assets	401.3	344.5	355.8	441.8	409.7	394.9	335.1	289.8	▼ -14%	▼ -28%
Net Investments	9.5	9.8	11.4	12.4	8.9	7.8	15.1	9.6	▼ -37%	▲ 1%
Debt	254.8	206.0	233.7	246.0	251.7	218.2	188.2	183.4	▼ -3%	▼ -28%
Economic performance (million €)										
Gross Value Added	96.0	88.0	104.8	108.4	122.4	96.7	81.0	83.8	▲ 3%	▼ -13%
Operating Cash Flow	18.4	19.9	23.3	20.1	31.3	17.3	8.9	9.3	▲ 5%	▼ -49%
Earning before interest and tax	6.1	9.5	10.8	7.4	18.0	5.3	-0.8	-0.4	▲ 54%	▼ -106%
Net Profit	5.3	9.6	10.2	9.0	12.8	3.0	-49.5	-5.9	▲ 88%	▼ -213%
Productivity and performance Indicators (%)										
Labour productivity (thousand €)	54.1	50.7	58.0	59.0	66.9	58.3	51.0	50.4		
Capital productivity	23.9	25.5	29.5	24.5	29.9	24.5	24.2	28.9		
GVA margin	18.3	18.7	18.3	18.0	19.7	17.4	16.1	16.2		
EBIT margin	1.2	2.0	1.9	1.2	2.9	1.0	-0.2	-0.1		
Net profit margin	1.0	2.0	1.8	1.5	2.1	0.5	-9.8	-1.1		
Return on Investment	1.5	2.8	3.0	1.7	4.4	1.4	-0.2	-0.1		
Financial Position	63.5	59.8	65.7	55.7	61.4	55.2	56.2	63.3		
Future Expectation Indicator	-0.7	-0.2	-0.3	-0.1	-1.1	-1.1	1.6	0.0		

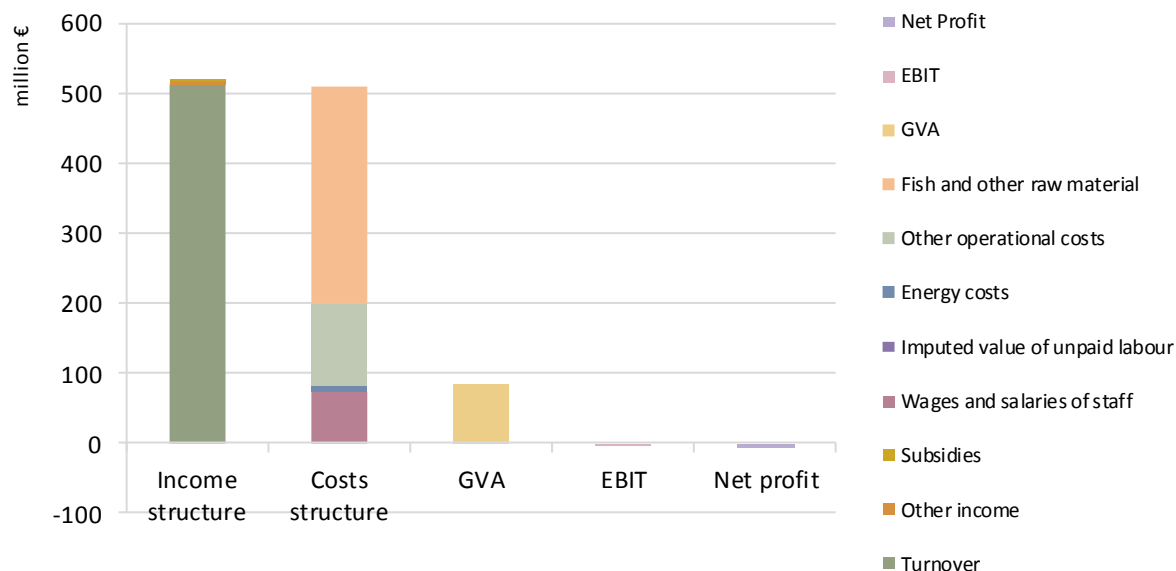


Figure 4.22.2: Economic performance of the Swedish fish processing sector, 2015

Income

The Swedish processing industry has shown a steady increase in net turnover since 2001, which probably is related to the increase in the total number of enterprises during the same time. With the exception of 2009 both turnover and total income increased every year during the period, both when expressed in € and in krona, but, due to exchange rates the increase was larger when expressed in €. The turnover decreased in 2013 and 2014 due to the merger of one of the fish processing enterprises. Over the studied period the turnover therefore decreased by 1% for enterprises where fish processing is their main activity. This can be compared to turnover for enterprises in which fish processing is not their main activity. For these enterprises, turnover increased from €73.4 million in 2008 to €223.32 million in 2015, which is an increase by more than 200%. The increase is most likely related to the merger and to the increase in total number of enterprises during the same period. The number of enterprises in which fish processing is not their main activity increased by 52%, from 87 to 132.

If turnover is aggregated for the enterprises where fish processing is their main activity and the ones where it is not, total turnover increased by 24% from €593.2 million in 2008 to €735.8 million in 2015. If the number of enterprises where aggregated in the same way, the increase was 18% during the studied period (301 in 2008 and 356 in 2015). Unfortunately, no data is available on other economic variables for enterprises in which fish processing is not their main activity and similar comparisons on an aggregated level can therefore not be made.

The variable "subsidies" shows a very large percentage change, but from extremely low values. The variable is one of two collected by surveys, and variations can probably be explained by differences in structures of the enterprises that are included in the survey or that one more measure has been paid one year compared to another. If you compare the value for the variable "subsidies" collected by surveys to the value from the European Fisheries Fund they correspond well.

When it comes to subsidies from the European Fisheries Fund, the Swedish processing industry has mainly received subsidies under Article 34 (investments in processing and marketing) during the studied period. The total OP budget for the Swedish fisheries program is approximately €105 million (of which 50% is national co-financing). Between 2007 and 2013 around 10% can be related to actions under measure 2.3 (Fish processing and marketing).

The processing industry has shown a great interest in these subsidies and the amount of the received subsidies varies considerably. More than 40% of the received subsidies under this measure amounted to less than 30,000 krona (approximately €3,200) and the larger subsidies can mainly be referred to subsidies that increase production capacity. Examples of investments in that measure

include cold storage rooms, sorting machines, facilities for fish handling, packaging machines, ice machines, recycling centres, loading docks and traceability systems for frozen fish. According to the Swedish 2016 Annual report for EFF, 254 applications were received, 150 of them approved and 141 finalised. The annual report states that 63 of the measures have led to an increase in processing capacity, 73 to new production, extension or modernization of the processing unit, and that five have led to a modernization of existing marketing establishments. There are several examples of investments that have resulted in better health and working conditions for some companies and improved environmental conditions. The processing industry has also received subsidies for MSC certification and the Swedish KRAV certification, for marketing surveys and for marketing campaigns etc.

When it comes to the European Maritime Fisheries Fund, the total budget is €172.9 million. The fifth union priority "Fostering marketing and processing", will be most interesting for the processing industry. One of the aims of that priority is to reinforce the processing and marketing of fisheries and aquaculture products through innovation, certification and improved product traceability. The total budget for this priority is €11.4 million. In 2015, 124 applications were received and 59 approved.

Expenditures

The purchase of fish and other raw material for production is without question the largest expenditure for the Swedish fish processing industry. It amounts to 54-63% of total production costs during the studied period. The processing industry is therefore sensitive to changes in prices of raw material as well as to changes in exchange rates. As shown in Table 4.22.2 this expenditure increased by 14% between 2008 and 2015, but if it had been presented in krona the increase would have been less (11%).

As mentioned before, there are insufficient quantities of fish of the correct quantity, quality and species in Swedish waters to satisfy the requirements of the Swedish processing industries' need for raw material. The processing industry is therefore highly dependent on imported raw material. Approximately 70-80% of the raw material is imported, but the share differs between species. For example, all Alaska Pollock used by the processing industry have to be imported. In addition, herring (Norwegian spring spawning herring), prawn (cooked and peeled), roe and farmed salmon have to be imported from third countries; if this was not possible the processing industry would not have sufficient quantities and the right quality of raw material. However, only 9% of Sweden's total import of fish and other seafood during 2015 came from EU28, which can be compared to 15% in 2008.

Wages and salaries added up to 15% of total production costs during the whole studied period, and decreased in value by 3% during the same period. However, the decrease is a result of the merger of one of the enterprises and does not show the development in a correct way during the period. Between 2008 and 2012 wages and salaries increased by 20%, which were a few percentage points higher than Sweden as a whole. Wages and salaries increased between 2014 and 2015 by 3%, almost the same as Sweden as a whole. When it comes to imputed value of unpaid labour, it is not relevant to analyse the development since the values are extremely low.

Energy costs represent a small share of total operational costs and have been fairly stable during the period, even in absolute terms. The variable is one of two collected by surveys, and the small variation can probably be explained by differences in structures of the enterprises that are included in the survey. "Other operational cost" decreased during the studied period, especially in 2009 when the krona was weak, and in 2013 and 2014 as a result of the merger. In 2015, the variable increased by 14%.

Capital Costs and Capital Value

It is noteworthy that financial costs and net investment increased significantly in 2014 from very low values. However, the increase can be explained by a large investment in a production facility and in new machines.

Performance Indicators

As shown in Table 4.22.2 all indicators decreased between 2008 and 2015, probably due to the merger of one of the fish processing enterprises. However, if you study the trend 2008-2012 all

indicators (except "Financial position") show an increasing trend, except for 2009 when the krona was weak compared to the €. The weakening of the market has also been affected by the financial crisis in 2009. However, despite the financial crisis the total number of enterprises has been increasing every year. Net profit has fluctuated, but displays a positive trend. The decrease in net profit in 2011 can be explained by increased costs for raw material and reduced TAC for i.e. Norwegian spring spawning herring (2010-2012). Since the processing industry feared a negative reaction from consumers if they were to increase their prices too quickly, they could not immediately compensate for the increase in raw material prices. Between 2014 and 2015 most indicators increased, some of them from very low values.

EBIT and GVA are low since income has not increased at the same rate as costs (especially other operational costs). EBIT has increased from low values, probably since turnover and costs for raw material had the same percentage increase. Like almost all indicators and variables, operating cash flow has had a positive trend between 2008 and 2012, but decreased in 2013 and 2014. However, in 2015 operating cash flow increased by 5% compared to 2014.

4.22.3 Overview of the Swedish fish processing sector by size categories

The fish processing industry sector in Sweden is very heterogeneous with small family businesses processing their own landings as well as larger enterprises with large-scale industrial production. A majority of the companies, however, are small firms with less than 10 employees. Please note that the Swedish data covers three segments, since the data in the third segment includes firms with more than 50 employees.



Figure 4.22.3: Swedish main structural and economic variables trends by size category, 2008-2015

Note: The data covers 3 segments, since the data in the third segment includes firms with more than 50 employees

As mentioned several times earlier the merger of one of the largest fish processing enterprises has affected the economic performance, especially in 2013 and 2014. When you compare the development in Figure 4.22.4, you can see some similarities. For example, the decrease in 2013 and 2014 can be most clearly seen in the segments with more than 50 employees.

When you compare developments in total income and total production costs for the three segments in Sweden, you can see that only in the middle segment, the increase in total income has been a few percentage points higher than the corresponding increase in total costs during the studied period. For the segment less than 10 employees, the decrease in total income was a few percentage points lower than the decrease in total production costs. The larger enterprises with industrial production are, however, generally speaking more dependent on imported raw material than smaller ones, which often process their own landing. Therefore, in addition to variations in the prices of raw material, the industry is also sensitive to fluctuations in exchange rates. This is illustrated in Figure 4.22.4 where it is shown that total production cost has increased by 34% between 2008 and 2012 for enterprises with more than 50 employees and by 3% for enterprises with less than 10 employees. The development in 2013 and 2014 is a result of the merge.

Even if the values for the different segments differ in Figure 4.22.5, the relationships between the included variables are almost the same for all segments. Purchase of fish and other raw material is the largest variable in total costs, followed by other operational costs and wages and salaries of the staff.

Table 4.22.3: Economic performance of the Swedish fish processing sector by size category (indicators in million €), 2008-2015

Variable	2008	2009	2010	2011	2012	2013	2014	2015		Δ (2014-15)	Δ (2008-15)	
less than or equal to 10 employees												
Total Income	91.3	77.9	85.3	92.7	95.8	98.8	94.9	84.4	▼	-11%	▼	-8%
Total production costs	89.0	75.8	80.9	87.2	92.0	94.1	88.8	79.7	▼	-10%	▼	-10%
Gross Value Added	14.5	14.3	16.3	19.8	18.9	20.0	20.8	17.0	▼	-18%	▲	17%
Operating Cash Flow	2.3	2.2	4.4	5.5	3.8	4.7	6.1	4.7	▼	-23%	▲	106%
Earning before interest and tax	-0.2	-0.2	2.3	2.9	1.4	1.9	3.9	2.6	▼	-33%	▲	1323%
Net Profit	-1.8	-1.8	1.1	2.4	0.5	-1.7	-46.3	-4.6	▲	90%	▼	-152%
between 11 and 49 employees												
Total Income	173.1	164.0	199.9	198.1	176.8	196.9	178.5	194.8	▲	9%	▲	13%
Total production costs	172.6	159.5	193.3	192.4	172.6	191.4	175.6	189.4	▲	8%	▲	10%
Gross Value Added	22.3	25.5	33.0	29.8	27.7	30.7	25.5	31.9	▲	25%	▲	43%
Operating Cash Flow	0.5	4.5	6.5	5.7	4.2	5.5	2.9	5.4	▲	90%	▲	1047%
Earning before interest and tax	-2.3	2.1	3.2	2.8	1.1	3.0	0.5	3.0	▲	515%	▲	228%
Net Profit	-1.2	2.5	3.5	3.6	0.0	3.7	1.0	4.0	▲	295%	▲	445%
between 50 and 249 employees												
Total Income	259.4	229.2	286.7	312.5	350.1	260.9	231.2	238.2	▲	3%	▼	-8%
Total production costs	243.8	215.9	274.3	303.6	326.8	253.8	231.3	239.0	▲	3%	▼	-2%
Gross Value Added	59.1	48.1	55.6	58.7	75.8	46.1	34.7	34.9	▲	1%	▼	-41%
Operating Cash Flow	15.6	13.3	12.3	8.9	23.3	7.1	-0.1	-0.8	▼	-655%	▼	-105%
Earning before interest and tax	8.6	7.6	5.3	1.7	15.6	0.4	-5.2	-5.9	▼	-14%	▼	-169%
Net Profit	8.2	8.9	5.5	3.0	12.2	1.0	-4.2	-5.3	▼	-27%	▼	-165%

Some of the economic indicators in Table 4.22.3 show an increase by several hundred percent for some segments, since the calculations are based on very low values. It is therefore not relevant to analyse the development. This is similar to when a country has few enterprises in one segment, and then the percentage change might also be misleading.

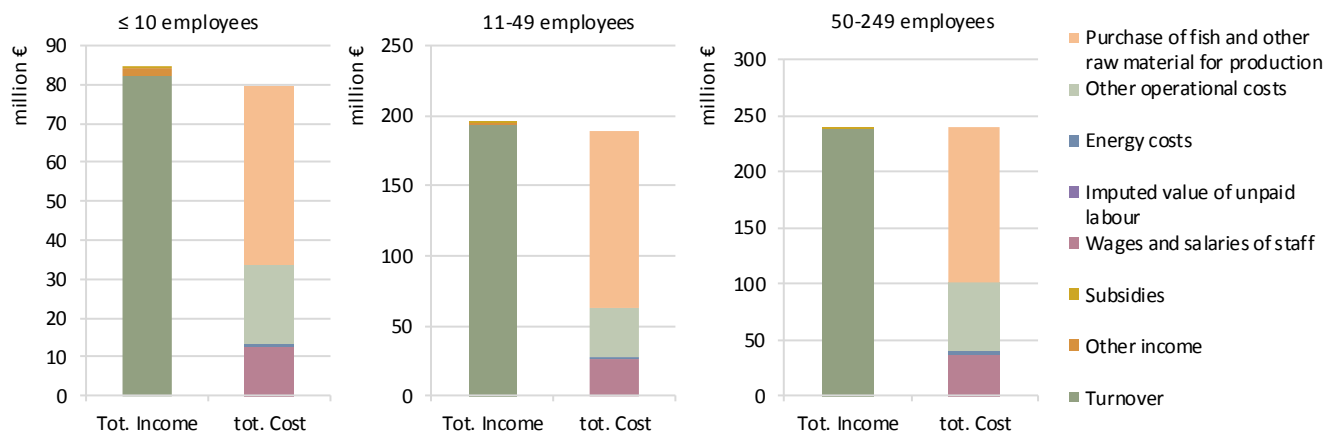


Figure 4.22.4: Swedish income and cost structure, by size category, 2015

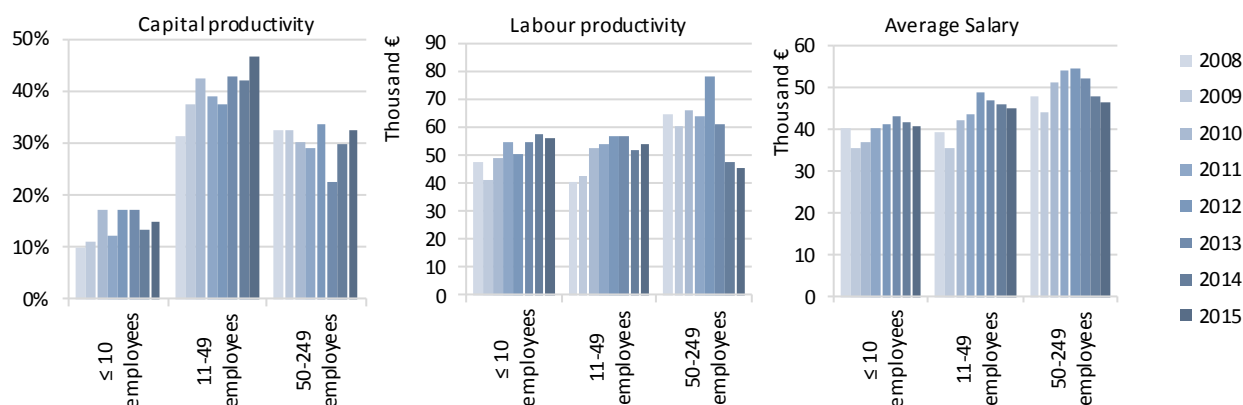


Figure 4.22.5: Swedish capital productivity, labour productivity and average salary trends, by size category, 2008-2015

4.22.4 Trends and drivers for change

The Swedish processing industry is to a large extent affected by the global situation, for example supply of raw material of the right quality and quantity and consumer behaviour. In 2014 the new Common Fisheries Policy for the EU entered into force, which aims to create a more sustainable sector. Fishing and aquaculture are to be sustainable ecologically, economically and socially. The ambition is that the new policy will increase the sector’s credibility and create sustainable fishery. Actors in the whole chain are to improve sustainability and pay more attention to fish and other seafood coming from sustainable stocks. If the sector’s credibility is low, there is a risk that consumers will prefer other protein-rich food than fish and other sea food. Hopefully, clearer labelling of for example origin and traceability will increase the sector’s credibility.

The Swedish processing industry works to a large extent with different certifications like the MSC, ASC and the Swedish KRAV label. Non-certified products are hard to place on the market since consumer awareness has increased, which of course has been picked up by the retailing chains. Also the fish and seafood guide from the WWF appears to play a more important role for consumers

and retailing chains. The aim of the WWF fish and seafood guide is to help consumers to choose fish that comes from sustainable stocks and to reduce the depletion of the oceans. Since consumer awareness is increasing, several retailing chains do not sell products that are marked with a red light in the WWF fish and seafood guide. For 2014, for example, the WWF put a red light on the shrimp from the North Sea (*Pandalus borealis*), which caused a debate in Sweden since according to ICES the shrimp stock has been fluctuated during the past ten years. One reason, according to ICES, could be fishing pressure, but natural variations are deemed to be the most important factor. Researchers estimate that despite the low level there are margins for a fishery.

There are insufficient quantities of fish of the correct quantity, quality and species in Swedish waters to satisfy the requirements of the Swedish processing industries' need for raw material. The processing industry is therefore highly dependent on imported raw material. Approximately 70-80% of the raw material is imported, but the share differs between species. Since the purchase of fish and other raw material for production accounts for 60% of total operational costs, the development of this variable is very important for the sector's economic performance. The processing industry often fears a negative reaction from consumers if it was to increase its own prices too quickly, which means that the industry cannot immediately compensate for the increase in raw material prices.

The processing industry in Sweden imports most of its raw material at reduced tariffs within the framework of autonomous tariff quotas (ATQs) and other import quotas. The volume of these quotas (and the in-quota tariff) is of vital importance for the industry since the in-quota tariff is lower than the so called MFN tariff (most favoured nation). If the quota is not large enough the industry has to import the raw material at full duty, which of course has a negative effect on their economic performance. For example, the autonomous tariff quota for cooked and peeled prawns for processing has been too small during some of the years in the studied period. It has frequently been exhausted as early as during the summer. As a consequence, the processing industry has had to store their raw materials in order to ensure a stable supply throughout the year. This increases their production costs.

Farmed salmon from Norway is one of the most imported raw materials used by the Swedish processing industry. Between 2008 and 2011 the imported quantity of whole salmon to Sweden increased by almost 60%. In 2011, this import accounted for 40% of the total Swedish import of fishery products. After the EU accession Sweden has become a transit country for Norwegian fish, especially salmon. In 2007, 15% of total EU import of fish and fishery products entered Sweden. In 2011, this share had increased to 58%. According to Swedish estimates nearly 80% of the value of fish in Swedish trade statistics 2009-2011 were re-exported to other countries, most likely without going through any processing in Sweden.

Data on trade patterns and domestic landings show clear trends. Domestic landings of fish decrease whereas imports increase of fish that is fresh, frozen or primarily processed. However, how dependent the enterprise is on imported or Swedish landed raw material depends on the individual enterprise.

The Swedish fleet is highly diversified with a broad range of vessel types targeting different species predominantly in the Baltic Sea, Skagerrak, and Kattegat regions. The size of the Swedish fishing fleet decreased between 2008 and 2015. The total number of vessels decreased by 14% to 1,298 in 2015, while total vessel tonnage (GT) and engine power (kW) of the fleet declined by 29% and 21%, respectively, during the same period. However, in 2015 the fleet, GT and kW increased by a few percent compared to 2014 as a result of a change in definition to include all active vessels during the year in the statistics, not as before, just vessels registered by 1 January. It is worth mentioning that the fleet is rapidly decreasing in size and therefore the changed definition and the increase in 2015 probably only caused a one-year break in the downward trend. The EU-subsidized scrapping campaign during late 2009 and 2010, along with the introduction of an ITQ system in the pelagic fishery, are the main reasons for the decrease. However, the eel fishing ban that was introduced in 2007 has also had some effect on the decrease of the total number of vessels, but only a minimal impact on the decrease in the fleet's capacity.

During 2008-2015 total landing weight decreased by 5% and at the same time the corresponding landing value decreased by 4%. The main reason for the decrease in landing weight was decreased quotas for mainly pelagic species. An increase in prices for shrimp, Norwegian lobster, herring and

sprat is the main reason for the increase in landing value during the studied period. In 2015 the total landing weight increased by 22% due to the new definition and higher quotas for herrings. Higher quotas for pelagic species and low fuel prices were the main driving forces behind the change from losses in 2014 to profits in 2015 for the Swedish fleet.

In 2010-2012 for example, the TAC for Norwegian spring spawning herring decreased, which led to increased costs for raw material and a decrease in net profit. The Swedish processing industry imports approximately 70% of all of its raw material and the sector is therefore dependent on tariff quotas and sensitive to changes in exchange rates. Since Swedish landings are declining it is likely that the share of imported raw material will increase as inputs in the fish processing industry in the future, since the industry needs raw material of the right quality and quantity. On the other hand, smaller enterprises that often process their own landings are less likely to be dependent on imported raw material. The ITQ system that was introduced in 2009 for the Swedish pelagic fishery has probably resulted in a win-win situation for the fishery sector as well as for the processing industry as a whole. The fishery can adapt their processes to better meet the demands of the processing industry, and the processing industry can invest in processes for better supply.

In recent years, demand has increased for highly processed products that are almost ready to eat. This development is likely to continue since most consumers prefer food that is almost ready to eat, easy to cook and healthy at the same time. A similar development has already taken place in sectors of other protein-rich food like chicken. The fishery products sector needs to move in this direction if it is to be competitive compared to beef, pork and chicken in the future. Developing new products and product differentiation are other ways for the enterprises to improve their economic performance and competitiveness.

Herring, sprat, cod, North Sea shrimp and Norwegian lobster are the most important species when it comes to landing volume and value in Sweden. They accounted for around 80% of the total Swedish landing value during the studied period, and for 90% of the landing volume. The prices of herring, sprat, North Sea shrimp and Norwegian lobster have increased during the period, but the price of Baltic cod has decreased. The decrease in cod prices has had a significant impact on the profitability of the Swedish cod fishermen. The cod that are caught in the Baltic Sea have been very small compared to earlier years and therefore yield a low price per kilo. The lower price for Swedish cod is also due to the fact that Baltic cod is part of a wider European market for whitefish. In recent years, Norway has increased its sales of cod a lot on the European market and prices for Swedish cod has have been pushed down.

Finally, the development of the krona is also of great importance for the processing industries' economic performance. If the data in this chapter was converted into krona a different development would have been shown, especially for the year 2009 when the Swedish krona was weak.

4.22.5 Outlook

The global situation, for example supply of raw material of the right quality and quantity, consumer behaviour and exchange rates, will most likely be important even in the future for the processing industry. Especially since the general trend since the beginning of the 2000s is a decrease in Swedish fleet capacity, including landing values and volumes. At the same time imports of fish that is fresh, frozen or primarily processed are increasing. However, how dependent enterprises are on imported or Swedish landed raw material depends on the individual enterprise.

Access to raw material of the right quality and quantity is vital for the Swedish processing industry to compete on the market. Increased competition can be an incentive for enterprises to reduce costs. Incentives for cost reductions combined with an expected increase in consumer demand, especially for highly processed products, can be reasons for enterprises to outsource production to regions with low labour costs and better access to raw materials.

Since the processing industry in Sweden imports most of its raw material at reduced tariffs within the framework of autonomous tariff quotas (ATQs) the reform of council regulation (EU) 2015/2265 will be of vital importance. If the ATQ for 2019-2021 will not be large enough the industry will have to import the raw material at full duty, which of course has a negative effect on their economic

performance. The most important ATQs for Sweden have so far been herring, shrimp and prawns and fish roe.

Brexit will most likely effect the Swedish fishing fleet and fish processing industry, depending on the outcome of the negotiations between the UK and the EU. The Swedish pelagic fleet substantially depends on catch opportunities in British waters, in value around 10%, mainly for sand eels, herring, and mackerel. The demersal fleet is currently not affected, but could indirectly be affected if other member states fishing in UK economic zone today will move their fishing into Sweden's economic zone. If the result of the negotiations is that the pelagic fleet will not be able to fish in British waters it will be a huge problem for the fishermen, but also for some parts of the processing industry. The problem occurs since the equipment is made and adjusted to process herring from the North Sea and there are limited possibilities to replace the fish with other raw material at a reasonable cost. The enterprises that might be effected by this has high fixed costs, that do not vary with volume, and to make it profitable the costs must be split on a production volume that is as high as possible.

4.22.6 Data coverage and quality

There are no major data issues in the Swedish DCF data. The Swedish data in this report was bought by the Swedish Board of Agriculture from Statistics Sweden and reported by the Swedish Board of Agriculture. The reported data are consistent with the data reported to Eurostat by Statistics Sweden. The calculations of indicators from the data collected under the data collection framework may however differ from figures reported to Eurostat, due to different methods of calculation or different exchange rates. The description and interpretation of the Swedish data show how important the choice of currency can be. Even if it is important to use the same currency for all countries for comparability it can have a large effect on the description of a single country.