



NAFC Marine Centre
University of the
Highlands and Islands

Port Arthur, Scalloway, Shetland ZE1 0UN, Scotland. Tel: 01595 772000 Email: nainfo@uhi.ac.uk WWW: www.nafc.ac.uk

Shetland's Maritime Economy

Ian R. Napier

(ian.napier@uhi.ac.uk)

April 2021



Updates

- ◆ 2019 mussel production figures added – 29th May 2020.
- ◆ 2019 salmon production figures added. Seafood total updated – 20th Oct 2020.
- ◆ 2020 fish landings figures added – 20th April 2021.

Contents

Introduction	2
Shetland's Economy	3
Fish Landings	7
All Species	7
Whitefish	8
Pelagic Fish	9
Shellfish	10
National Context	11
Landings from Shetland Waters	13
Aquaculture	15
Salmon	15
Mussels	16
National Context	17
Seafood Processing	18
Seafood Industry	20
Oil Industry	21
Discussion	22

Introduction

This report summarises available information on Shetland's seafood industries (fishing, aquaculture and seafood processing) and the contribution that they make to the islands' economy.

Further Information

For further information, or any queries, please contact:

Ian R. Napier, Tel. 01595 772000, Email: ian.napier@uhi.ac.uk

Shetland's Economy

Shetland's economy is dominated by maritime industries, and in particular by seafood industries: fish catching, aquaculture and seafood processing. Seafood industries contributed some £310 million to Shetland's economy in 2010/11 (when the last detailed analysis of Shetland's economy was carried out) – more than one-quarter of the total value of the local economy (Figure 1, Table 1) and more than half of the non-service sector (Figure 2).

Other maritime sectors of the economy (ports & harbours, sea transport and marine engineering) contributed a further £53 million, bringing the total value of Shetland's maritime economy to £363 million, one-third of the total, or two-thirds of the non-service sector (Table 1, Figure 2).

In contrast, the oil industry contributed just £71 million to the local economy (7% of the total), while agriculture and knitwear contributed only relatively small amounts.

Other significant elements of the Shetland Economy in 2010/11 included construction (7%), public administration (6%), retail (6%), health and social care (8%), land and air transport (7%), utilities (4%), and education (4%). Tourism was not identified as a distinct sector in the 2010/11 analysis but the 'accommodation' and 'catering' sectors between them accounted for only about 2% of the value of Shetland's economy.

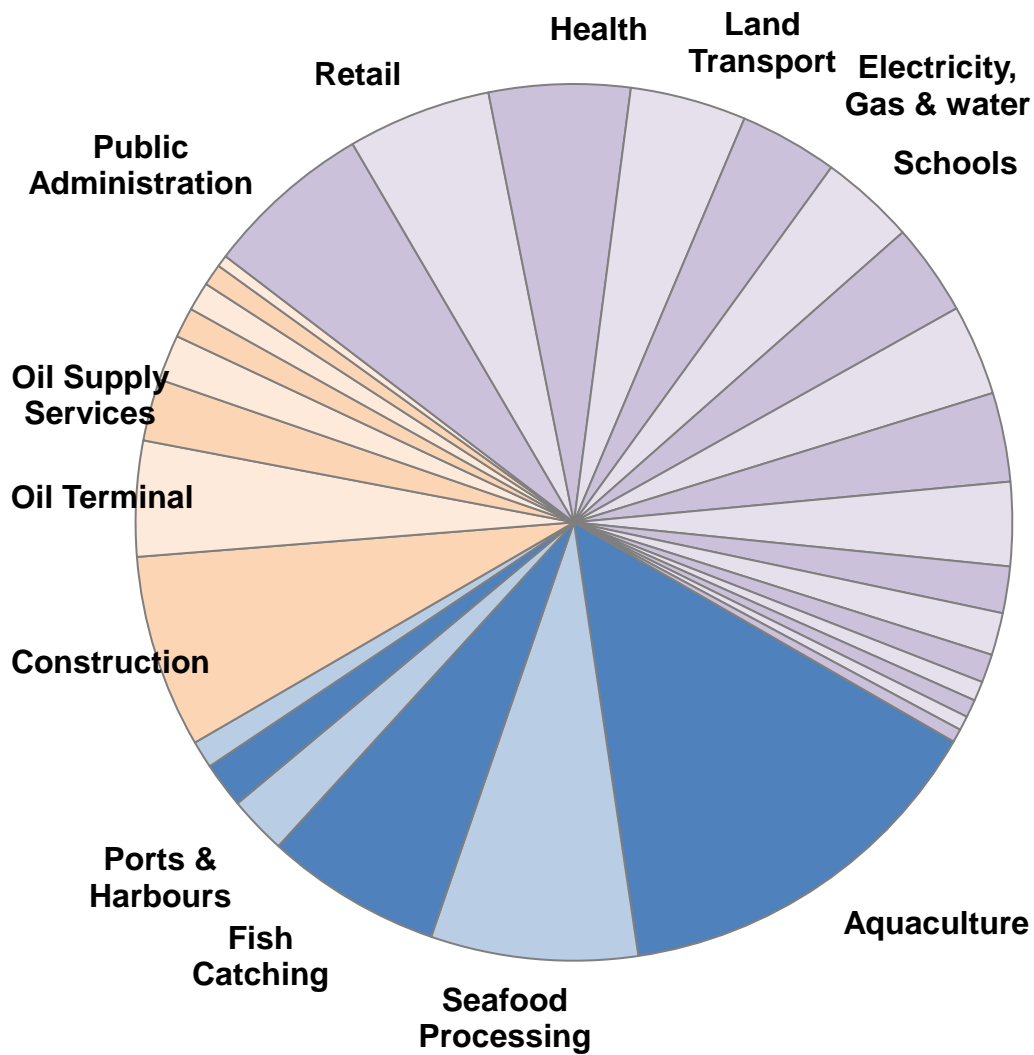


Figure 1 Breakdown of the Shetland economy in 2010/11 with key sectors highlighted. (Total value of output. For full details see Table 1).

Table 1 The total output of the Shetland economy by sector in 2010-11. (Data from Dyer et al, 2013*.)

Sector	Total Output (£m)	% of Total	% of Non-Service
MARITIME	£363.3	33.3%	64.0%
Aquaculture	£156.3	14.3%	27.5%
Seafood Processing	£83.3	7.6%	14.7%
Fish Catching	£70.9	6.5%	12.5%
Total Seafood	£310.4	28.4%	54.6%
Ports & Harbours	£23.4	2.1%	4.1%
Sea Transport	£18.4	1.7%	3.2%
Marine Engineering	£11.1	1.0%	1.9%
OTHER NON-SERVICE	£285.2	26.1%	36.0%
Construction	£77.7	7.1%	13.7%
Oil Terminal	£46.4	4.3%	8.2%
Oil Supply Services	£25.0	2.3%	4.4%
Agriculture	£18.5	1.7%	3.2%
Mining	£12.1	1.1%	2.1%
Other Manufacturing	£11.6	1.1%	2.0%
Other Food & Drink Processing	£8.8	0.8%	1.5%
Textiles (Knitwear)	£4.7	0.4%	0.8%
SERVICE	£442.9	40.6%	---
Public Administration	£67.6	6.2%	---
Retail	£57.8	5.3%	---
Health	£56.8	5.2%	---
Land Transport	£46.7	4.3%	---
Electricity, Gas & water	£39.6	3.6%	---
Schools	£38.3	3.5%	---
Other Personal Services	£37.0	3.4%	---
Financial Services	£36.5	3.3%	---
Social Work	£35.9	3.3%	---
Air Transport	£33.7	3.1%	---
Technical & Prof' Services	£18.7	1.7%	---
Accommodation	£17.1	1.6%	---
Wholesale	£11.4	1.0%	---
IT & Real Estate Services	£7.9	0.7%	---
College	£7.2	0.7%	---
Communications	£5.8	0.5%	---
Catering	£5.3	0.5%	---
TOTAL	£1,091.4	100%	---

* Dyer, G.A., Roberts, D. & Blackadder, A. 2013. *An Analysis of the Shetland Economy Based on Regional Accounts for 2010-11*. Report by the Hutton Institute (Macaulay Scientific Consulting Ltd.) for the Shetland Islands Council. Available at: <https://www.shetland.gov.uk/coins/submissiondocuments.asp?submissionid=14530> (appendix).

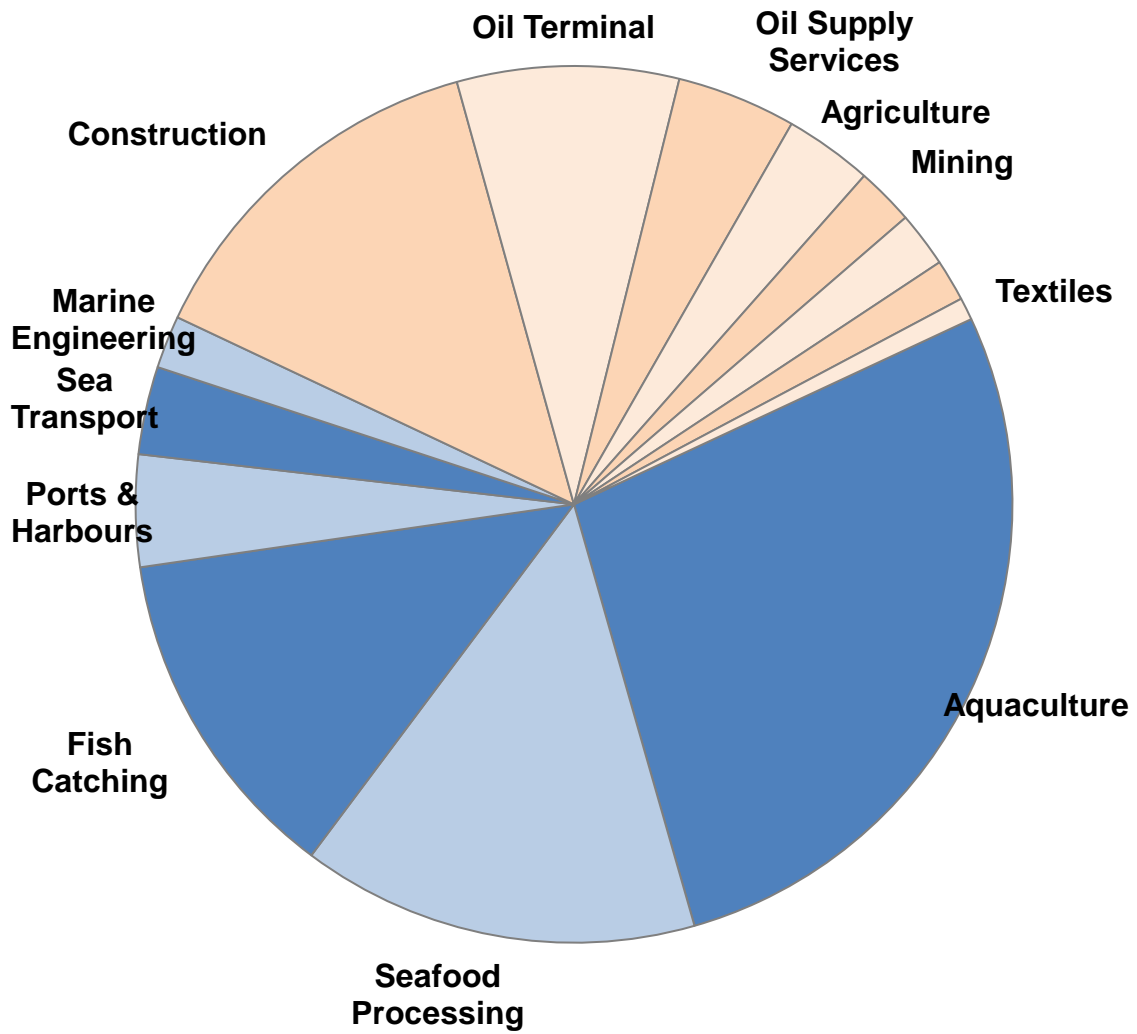


Figure 2 Breakdown of the non-Service sectors of the Shetland economy in 2010/11 with key sectors highlighted. (Total value of output. For full details see Table 1).

Fish Landings – All Species*

Almost 54,000 tonnes of fish and shellfish, worth some £73 million, were landed in Shetland in 2020 (Table 2, Figure 3). That was slightly more weight than in 2019, but somewhat less in value.

Table 2 The weight and value of all fish and shellfish landed in Shetland in 2020 and 2019, and the percentage changes in each from 2019 to 2020.

ALL Species	Tonnes	£ m
2020	53,853	£73.2
2019	50,211	£80.1
% change	+7%	-10%

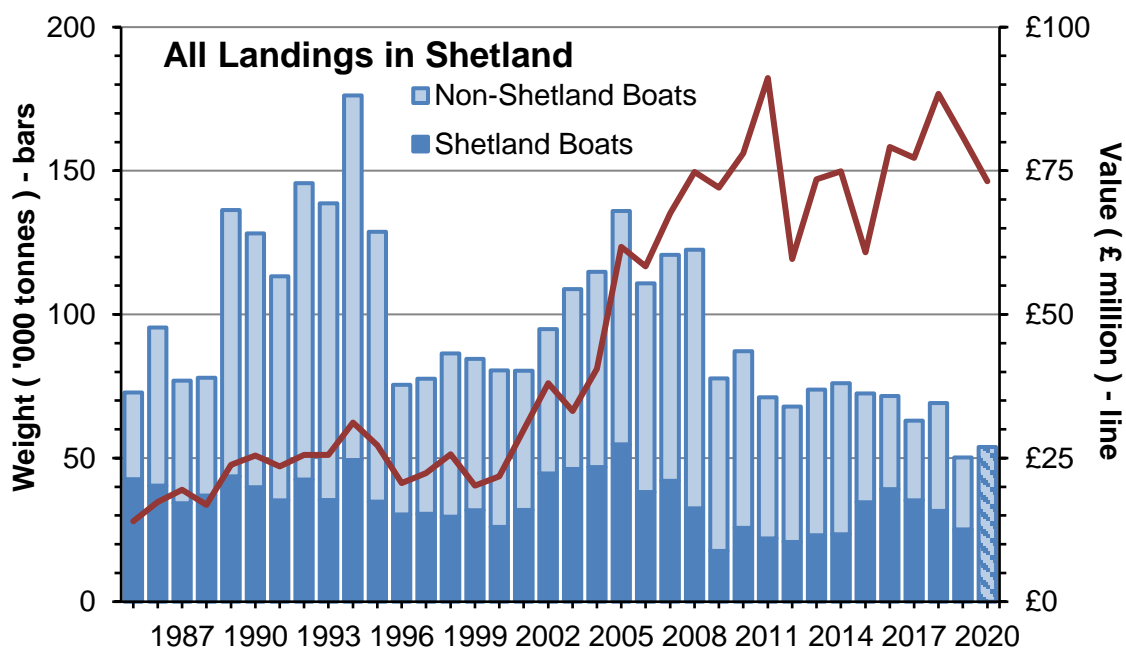


Figure 3 The weight (bars) and value (line) of all fish and shellfish landed in Shetland from 1985 to 2020. The weight landed in 2020 is the total by all boats.

* Fish landings data for 2020 are derived from an analysis of data published by the UK Marine Management Organisation (MMO): *Monthly UK sea fisheries statistics*. Available at: <https://www.gov.uk/government/collections/monthly-uk-sea-fisheries-statistics>.

Data for 2019 are from *Shetland Fisheries Statistics 2019*. Available at: <https://www.nafc.uhi.ac.uk/research/statistics/fisheries/>.

Fish Landings – Whitefish

Note: These figures include landings of squid and Nephrops which although technically shellfish are landed predominantly by whitefish boats in Shetland.

Just over 18,000 tonnes of whitefish, worth some £38 million were landed in Shetland in 2020 (Table 3, Figure 4), substantially less than in 2019.

The decrease in whitefish landings can be attributed partly to cuts in quotas for some key species in 2020, but primarily to the disruption of markets by the Covid epidemic from March 2020.

Table 3 The weight and value of whitefish landed in Shetland in 2020 and 2019, and the percentage changes in each from 2019 to 2020.

Whitefish	Tonnes	£ m
2020	18,662	£38.3
2019	24,090	£52.2
% change	-23%	-27%

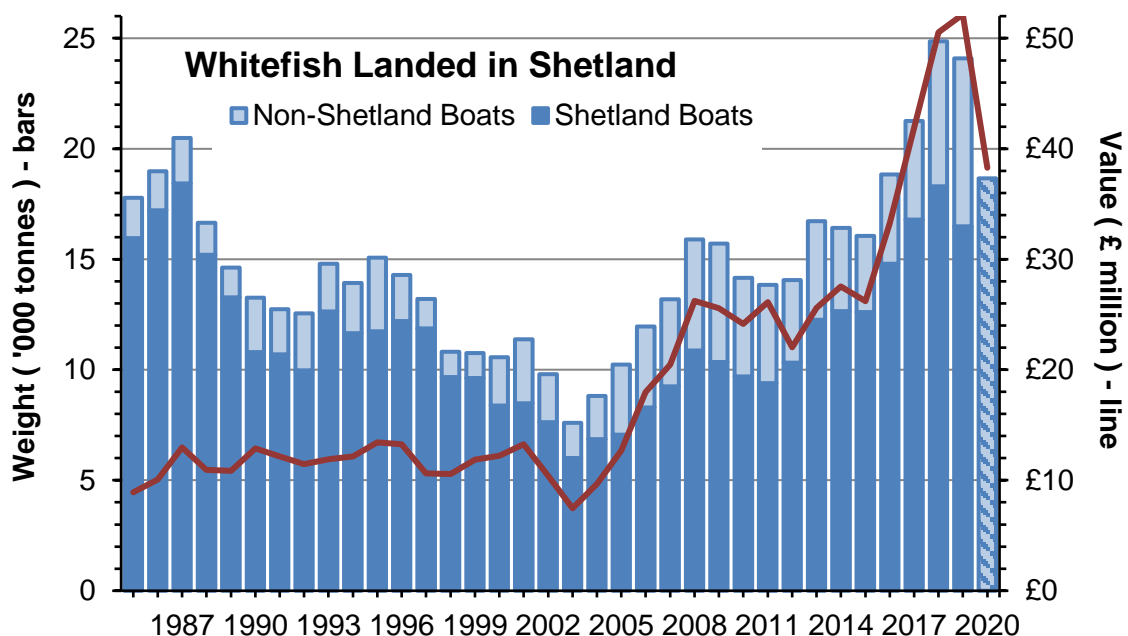


Figure 4 The weight (bars) and value (line) of all fish and shellfish landed in Shetland from 1985 to 2020. The weight landed in 2020 is the total by all boats.

Fish Landings – Pelagic Fish

About 33,000 tonnes of pelagic fish, worth £30 million were landed in Shetland in 2020 (Table 4, Figure 5). That was a substantial increase from 2019 but remained relatively low in historical terms.

Table 4 The weight and value of pelagic fish landed in Shetland in 2020 and 2019, and the percentage changes in each from 2019 to 2020.

Pelagic Fish	Tonnes	£ m
2020	33,049	£30.3
2019	24,045	£22.7
% change	+37%	+34%

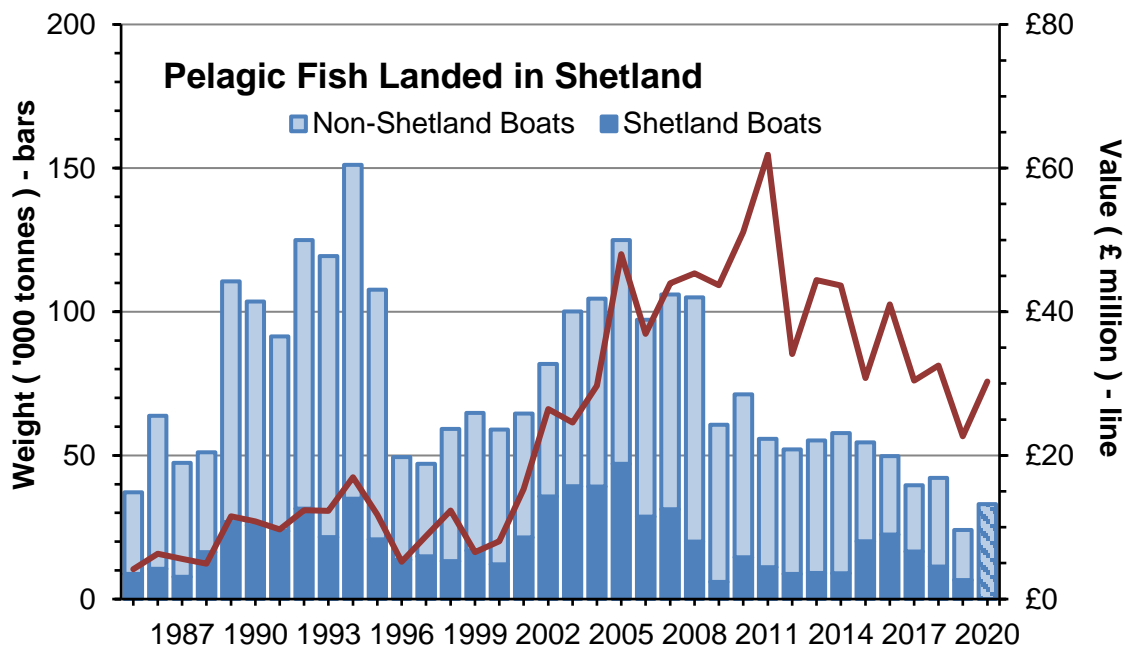


Figure 5 The weight (bars) and value (line) of pelagic fish landed in Shetland from 1985 to 2020. The weight landed in 2020 is the total by all boats.

Fish Landings – Shellfish

Note: These figures do not include landings of squid and Nephrops which in Shetland are landed predominantly by whitefish boats.

Just over 2,100 tonnes of shellfish, worth about £5 million were landed in Shetland in 2020 (Table 5, Figure 6). That was slightly more than in 2019, although the value was substantially less.

It is likely that the value of shellfish was affected by the Covid epidemic from March 2020.

Table 5 The weight and value of shellfish landed in Shetland in 2020 and 2019, and the percentage changes in each from 2019 to 2020.

Shellfish	Tonnes	£ m
2020	2,143	£5.1
2019	2,076	£6.1
% change	+3%	-24%

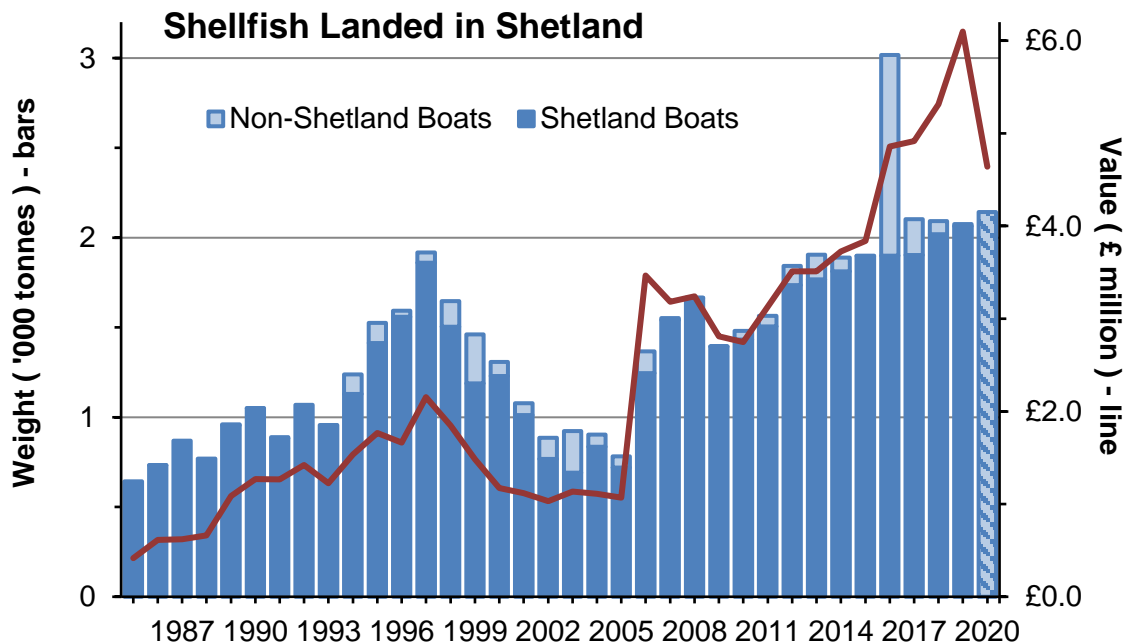


Figure 6 The weight (bars) and value (line) of shellfish landed in Shetland from 1985 to 2020. The weight landed in 2020 is the total by all boats (but landings by non-Shetland boats were probably negligible).

Fish Landings – National Context

Landings of fish and shellfish in Shetland in 2020 accounted for 13% of all the landings in the UK and 19% of all the landings in Scotland (Figure 7). For finfish only (excluding shellfish) the proportions were higher: 17% of all landings in the UK and 21% of all landings in Scotland.

In 2020 (Table 6):

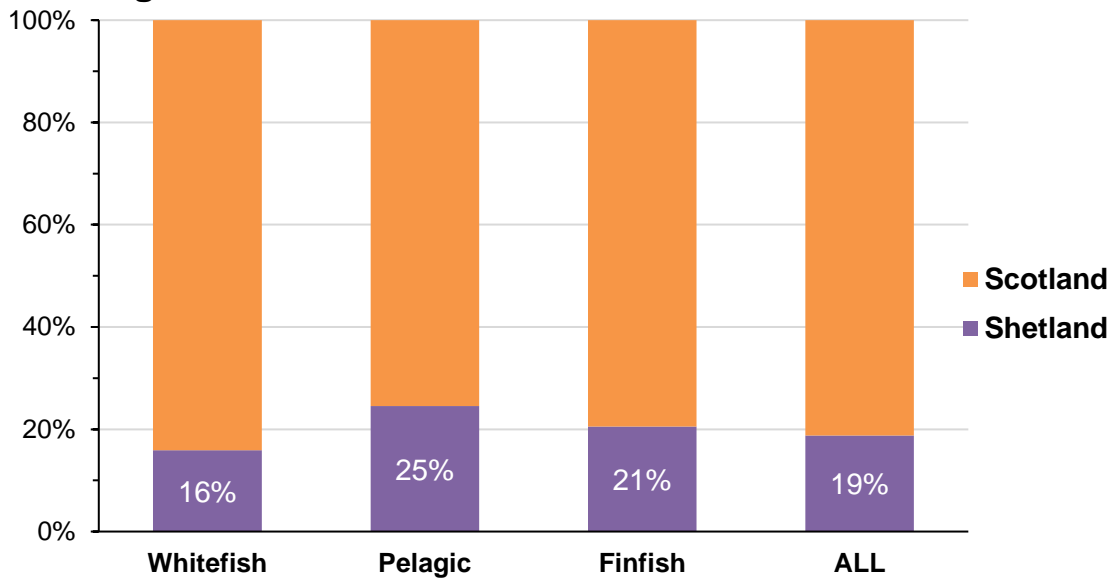
- ◆ More pelagic fish were landed in Shetland than in all of England, Wales and Northern Ireland.
- ◆ More finfish were landed in Shetland than in all of England and Wales (only slightly less than the total in England, Wales and Northern Ireland).

Table 6 The weight and value of fish and shellfish landed in 2020 in Shetland, Scotland, England, Wales and Northern Ireland and totals for England, Wales and Northern Ireland (EWNI) and the whole UK. (All fishing boats. Scotland figures include landings in Shetland.)

	Whitefish		Pelagic Fish		All Finfish		All Fish & Shellfish	
	'000 t.	£ m	'000 t.	£ m	'000 t.	£ m	'000 t.	£ m
Shetland	18.4	£37.6	33.0	£30.3	51.5	£67.9	53.9	£73.2
Scotland	115.8	£196.6	134.8	£113.9	250.7	£310.5	286.9	£412.8
England	25.8	£56.9	11.4	£4.3	37.3	£61.2	97.1	£172.2
Wales	3.4	£11.0	0.0	£0.0	3.4	£11.0	9.6	£21.0
N. Ireland	1.6	£2.0	10.3	£6.4	11.9	£8.4	20.0	£24.1
Total EWNI	30.8	£69.9	21.8	£10.6	52.5	£80.5	126.7	£217.3
Total UK	146.6	£266.5	156.6	£124.6	303.2	£391.0	413.6	£630.1

Note: The figures in this table for landings in Shetland differ slightly from those presented earlier in this report as landings of squid and Nephrops are included with shellfish rather than whitefish.

Landings in Scotland



Landings in the UK

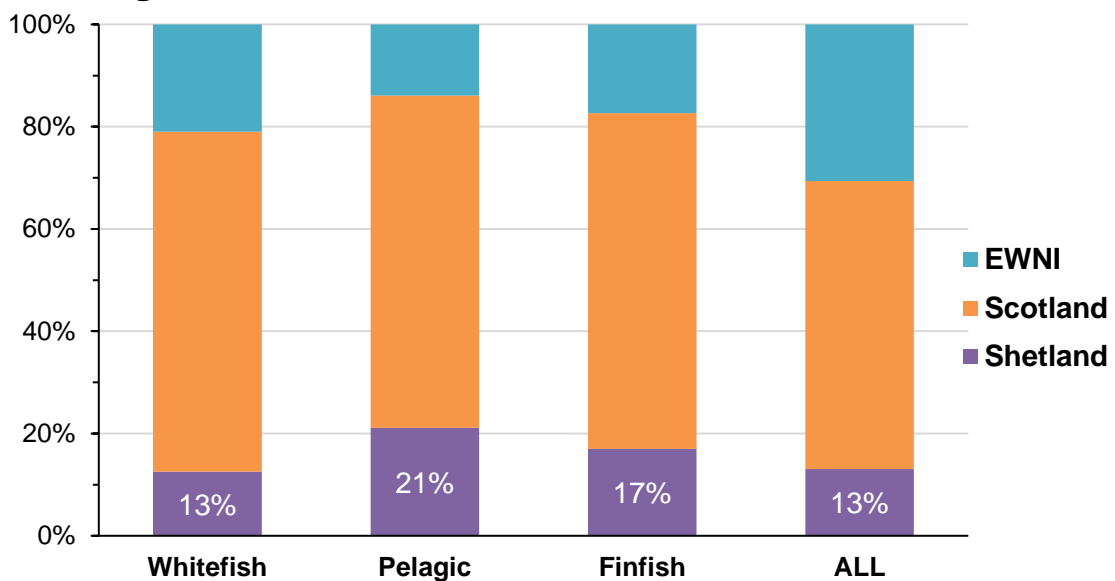


Figure 7 The proportions of all fish and shellfish landed in Scotland (top) and the UK (bottom) in 2020 that were landed in Shetland, the rest of Scotland and England, Wales and Northern Ireland ('EWNI').

Fish Landings from Shetland Waters*

It is estimated that UK fishing boats landed some 238,000 tonnes of fish and shellfish caught within 50 nautical miles of Shetland in 2018 (Table 7). That represents almost one-third (31%) of all the fish and shellfish landed by the UK fleet (from everywhere), or more than half (51%) of the total landings from the Scottish EEZ (Table 8).

The quantities of fish caught around Shetland by non-UK fishing boats in 2018 are not known, but it was previously estimated[†] that in 2016 EU fishing boats accounted for almost half (46%) of the fish and shellfish caught within 50 miles of Shetland by UK and EU boats (the exact percentage differed for each species group and between weight and value).

Assuming that EU fishing boats accounted for the same proportions of the landings in 2018 as they did in 2016 suggests that a total of some 440,000 tonnes of fish and shellfish, worth more than £430 million, were caught within 50 miles of Shetland and landed by UK and EU fishing boats in 2018 (Table 7). These estimates do not include landings by non-EU fishing boats (Norwegian, for example) so the total quantity of fish caught around Shetland is probably even higher than these estimates suggest.

Table 7 The estimated weight and value of fish and shellfish landed from the area within 50 miles of Shetland in 2018 by UK and EU fishing boats in 2018.

2018	UK Boats		EU Boats		UK & EU Boats	
	Tonnes	£ m	Tonnes	£ m	Tonnes	£ m
Whitefish	54.8	£105.9	19.2	£29.9	74.0	£135.8
Pelagic Fish	177.6	£147.8	170.6	£125.9	348.2	£273.7
All Finfish	232.3	£253.8	189.8	£155.8	422.2	£409.6
Shellfish	5.5	£15.6	0.1	£2.1	5.6	£17.8
TOTAL	237.8	£269.4	202.6	£165.1	440.4	£434.5

* These data are derived from an analysis of data published by the UK Marine Management Organisation: *UK fleet landings by ICES rectangle*. Available at: <https://www.gov.uk/government/statistics/uk-sea-fisheries-annual-statistics-report-2018>.

† See: *Shetland Fisheries Statistics 2016* (available at: <https://www.nafc.uhi.ac.uk/fish-stats>).

Table 8 The proportions of the total landings by UK fishing boats estimated to have been caught within 50 miles of Shetland in 2018.

Caught within 50 miles of Shetland (by weight; UK boats)	White -fish	Pelagic Fish	Fin- fish	Shell- fish	ALL
% of all landings (from everywhere)	31%	46%	41%	4%	34%
% of all landings from UK EEZ	42%	58%	53%	5%	43%
% of all landings from Scottish EEZ	51%	63%	59%	13%	55%

Aquaculture - Salmon*

About 36,000 tonnes of farmed salmon, worth just over £200 million were produced in Shetland in 2019 (Table 9, Figure 8). That was slightly more than in 2018 by weight but the value was slightly less.

Table 9 The weight and value of farmed salmon produced in Shetland in 2019 and 2018, and the percentage changes in each from 2018 to 2019.

Salmon	Tonnes	£ m
2019	36,141	£190.5
2018	35,947	£202.4
% change	+8%	-6%

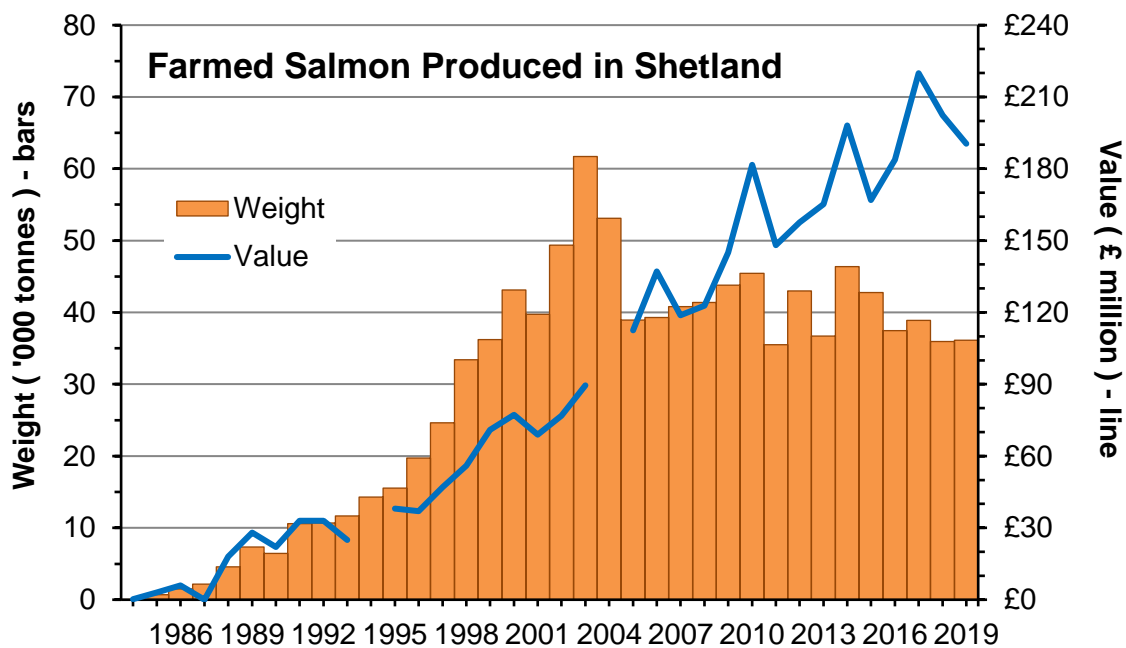


Figure 8 The weight (bars) and value (line) of farmed salmon produced in Shetland from 1984 to 2018. No values are available for 1994 and 2005.

* These data are derived mainly from Marine Scotland's annual *Scottish Fish Farm Production Surveys*: <https://www.gov.scot/collections/scottish-fish-farm-production-surveys/> with some additional data from the Shetland Islands Council's annual *Shetland in Statistics*.

Aquaculture - Mussels*

Just over 5,300 tonnes of farmed mussels, worth almost £5 million were produced in Shetland in 2019 (Table 10, Figure 9). That was slightly more than in 2018, although the value was substantially less.

Table 10 The weight and value of farmed mussels produced in Shetland in 2018 and 2017, and the percentage changes in each from 2017 to 2018.

Mussels	Tonnes	£ m
2019	5,314	£4.9
2018	5,160	£5.9
% change	+3%	-17%

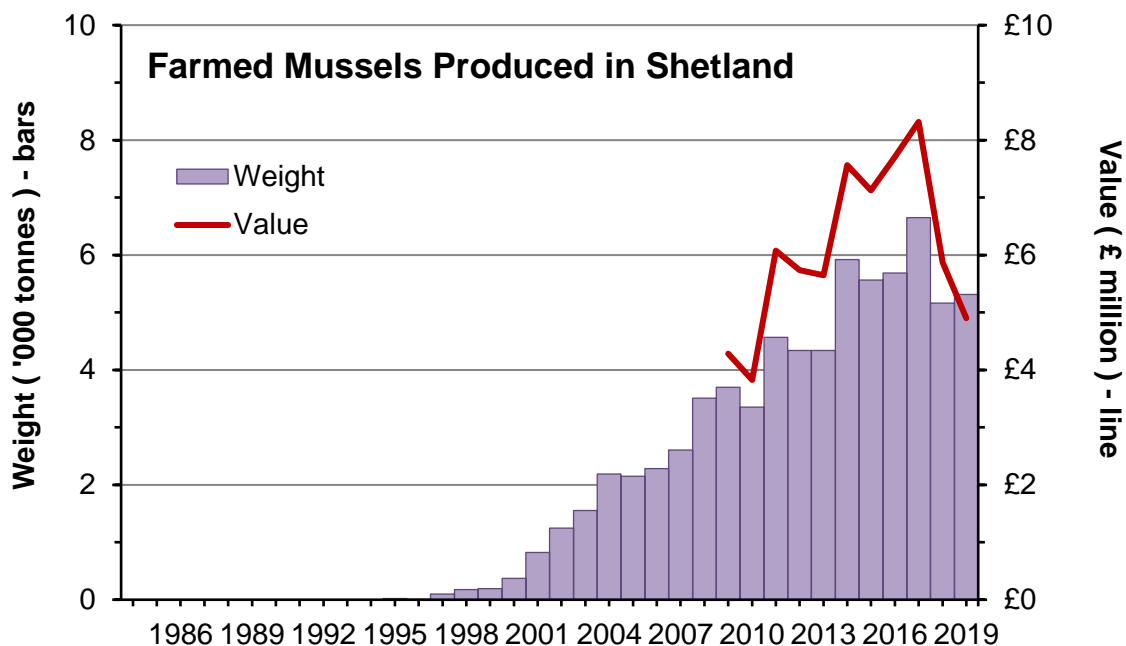


Figure 9 The weight (bars) and value (line) of farmed mussels produced in Shetland from 1984 to 2019. Values are not available prior to 2009.

* These data are derived mainly from Marine Scotland's annual *Scottish Shellfish Farm Production Surveys*: <https://www.gov.scot/collections/scottish-shellfish-farm-production-surveys/> with some additional data from the Shetland Islands Council's annual *Shetland in Statistics*.

Aquaculture - National Context

Shetland accounted for just under one-quarter of the farmed salmon produced in Scotland in 2019, and three-quarters of the farmed mussels (Table 11, Figure 10).

Table 11 The weight and value of farmed salmon and mussels produced in 2019 in Shetland and Scotland (including Shetland) and production in Shetland as a % of the Scottish total.

	Salmon		Mussels	
	'000 t.	£ m	'000 t.	£ m
Shetland	36.1	£190.5	5.3	£4.9
Scotland	203.9	£1,074.4	6.7	£6.2
% in Shetland	18%	18%	79%	79%

Aquaculture - Production in Scotland

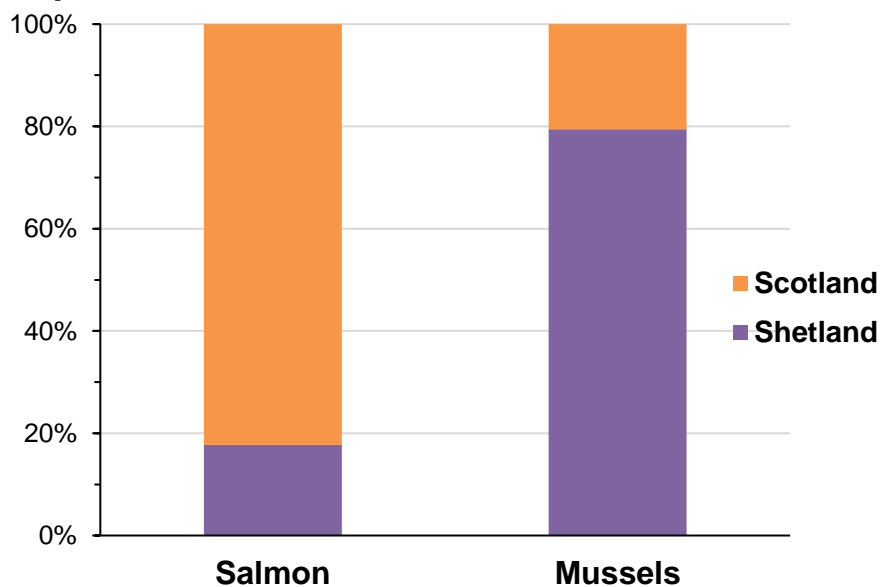


Figure 10 The proportions of the farmed salmon and mussels produced in Scotland in 2019 that were produced in Shetland and the rest of Scotland.

Seafood Processing

Data on Shetland's seafood processing industry is not routinely collected or published.

The last detailed analysis of the Shetland economy* found that the value (total output) of seafood processing in Shetland was about £83 million in 2010/11, compared to a total output from fishing and aquaculture of £227 million (Table 12). The value of the seafood sector was thus 37% of the value of the fishing and aquaculture sectors.

While the value of the seafood processing sector in the years since (and before) 2010/11 is not known, it can be estimated by taking it to be 37% of the combined output value of fishing and aquaculture in each year (which is known). On that basis, it can be estimated that seafood processing contributed almost £109 million to Shetland's economy in 2018 (Table 12, Figure 11).

Table 12 The values (total output) of the fishing, aquaculture and seafood processing sectors of the Shetland economy in 2010/11, the values of the fishing and aquaculture sectors and the estimated values of the seafood processing sector and of the total seafood sector in 2019. (Assuming that processing accounted for the same proportion of the combined value of the fishing and aquaculture sectors in 2019 as it did in 2010/11.)

	2010/11	2019
	£ m	£ m
Fishing	£70.9	£71.4
Aquaculture	£156.3	£195.4
Fishing + Aquaculture	£227.2	£266.8
Seafood Processing	£83.3	£97.8
Processing as % of Fish' & Aqu'	37%	37%
TOTAL SEAFOOD	£346.7	£364.6

* See page 3.

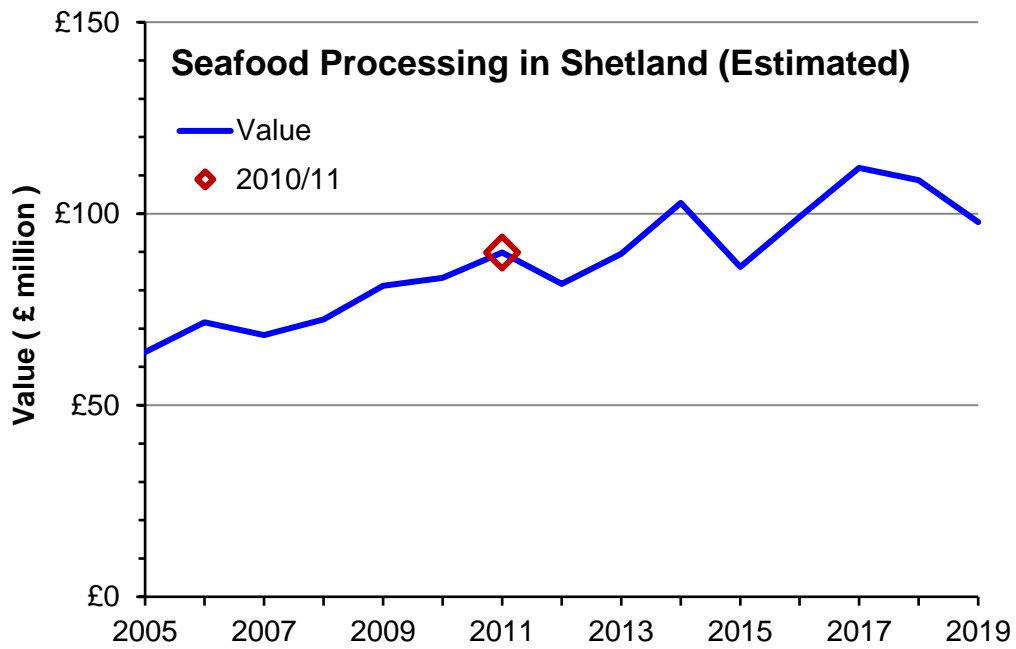


Figure 11 The estimated value of the seafood processing sector in Shetland from 2005 to 2019. (Based on the relative values of fish catching, aquaculture and seafood processing in 2010/11; see Table 12.)

Seafood Industry

Shetland’s seafood industries (fishing, aquaculture and seafood processing) contributed £347 million to the local economy in 2010/11 (Table 12).

Based on the estimated value of the seafood processing sector in 2019 (see page 18), it can be estimated that the total value of the seafood industries to the Shetland economy in 2019 exceeded £360 million (Table 12, Figure 13).

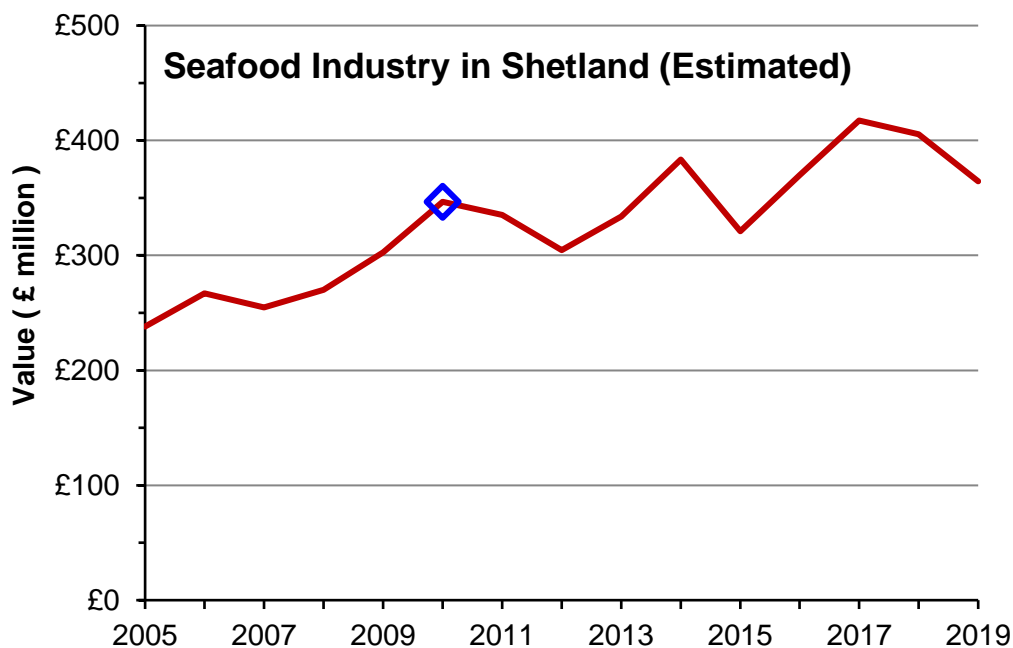


Figure 12 The estimated total value of the seafood industry (fishing + aquaculture + processing) in Shetland from 2005 to 2019. (Based on the known values of fishing and aquaculture in each year and the estimated value of the seafood sector; see Figure 11.)

Oil Industry*

'Oil' is often the principal industry associated with Shetland and is the only other sector of the local economy for which a long-term time series of data is available. This is in the form of the annual quantity of crude oil passing through the Sullom Voe oil terminal; the industry's other principal contribution to the local economy is through the oil supply sector.

Just over five million tonnes of crude oil passed through the Sullom Voe oil terminal in 2017 (the last year for which data are available) (Figure 13). The throughput of oil has declined steadily over the last two decades, from an average of over 30 million tonnes each year in the 1990s to about 5 million tonnes in 2017. The estimated value of the throughput has fallen even more sharply in recent years due to the fall in global oil prices.

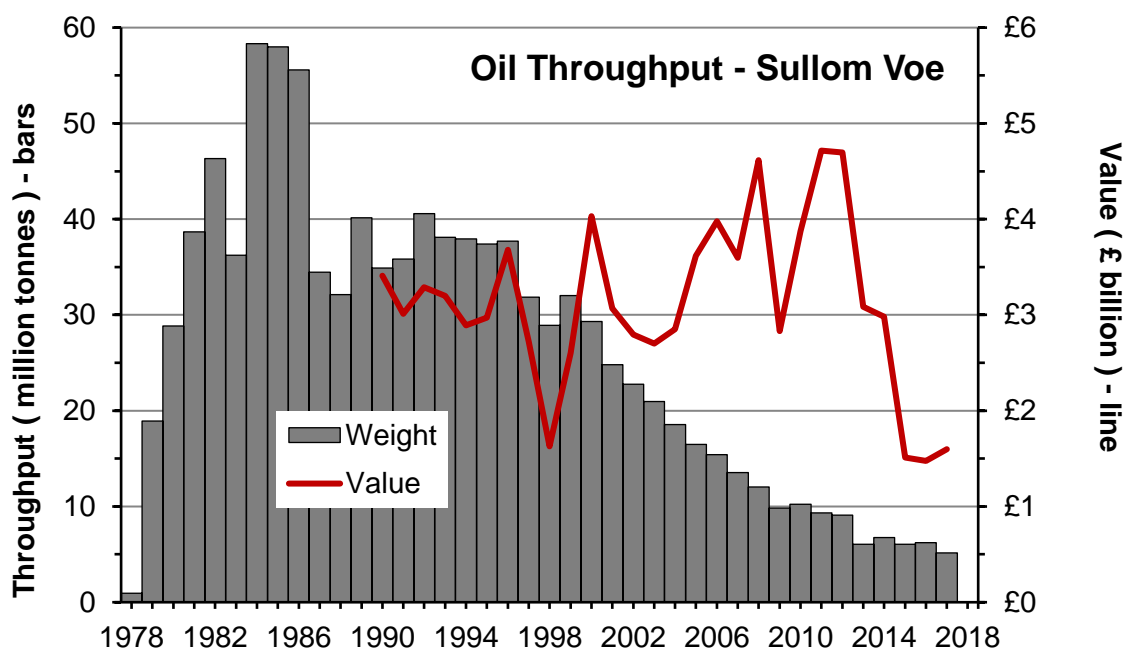


Figure 13 The weight and estimated value of crude oil passing through the Sullom Voe oil terminal annually from 1978 to 2017. Estimated values are based on annual average values of Brent Crude (\$/barrel) and \$/£ exchange rates and on an average barrel/tonne conversion factor.

* These data are derived from the Shetland Islands Council's annual *Shetland in Statistics* reports.

Discussion

The maritime industries, especially the seafood industries, dominate Shetland's economy. Fishing, aquaculture and seafood processing contributed more than £300 million to Shetland's economy in 2010/11 – when the last detailed analysis of the local economy was carried out. That was more than one-quarter of the total value of the local economy and was substantially more than oil (7%) or Shetland's other traditional industries: agriculture (<2%) and knitwear (<1%).

The estimated total value of Shetland's seafood sector has increased by about 20% since 2010 (Figure 14). Over the same period the oil industry's contribution to the local economy has almost certainly fallen significantly; the throughput of oil at the Sullom Voe oil terminal halving more than halved between 2010 and 2017 (Figure 14).

There is no reason to believe that any of the other major sectors of the Shetland economy have grown substantially since 2010/11. Indeed some, such as public administration, are likely to have contracted. While some smaller sectors of the economy may have expanded significantly they are unlikely to have become major elements of the economy as they started from a relatively small size.

It seems reasonable to conclude, therefore, that the seafood industries' contribution to Shetland's economy is greater now than it was in 2010/11.

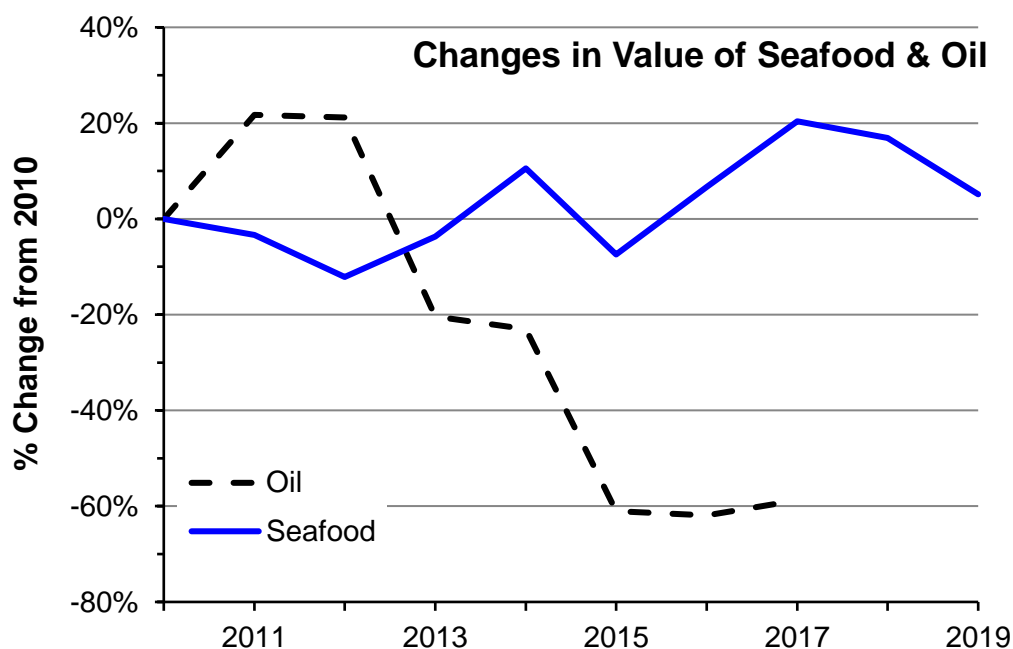


Figure 14 The percentage changes from 2010 in the estimated values of seafood production in Shetland and oil throughput at the Sullom Voe oil terminal.

