Joint Research Centre

The European Commission's science and knowledge service

THE EU FISHING FLEET Results from the 2019 AER

Market Advisory Council (MAC) Expert Working Group 1

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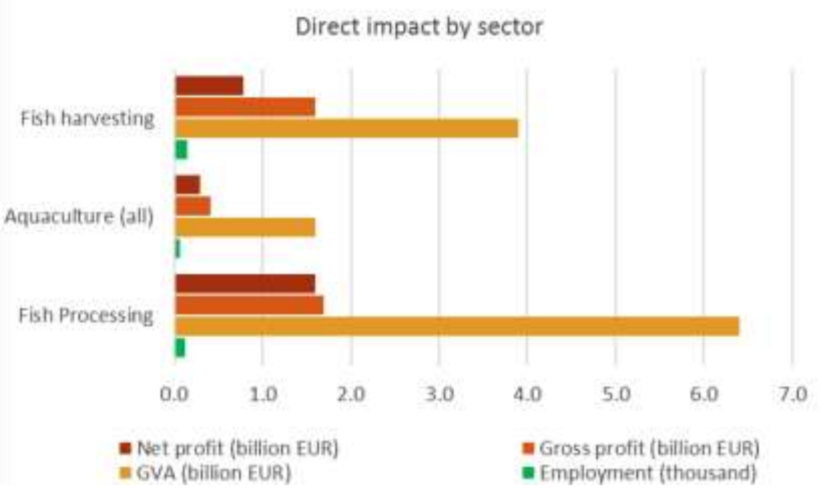
European Commission

Outline

- Background
  - STECF and the EU Data collection framework
- Overview of the EU fishing fleet
  - Status and recent trends
- Socio-economic performance of the EU fleet
  - Profitability and productivity indicators
  - Results by main fishing regions and fishing activity
- Nowcasts in the AER
- Landings data and prices analysis in the AER
- Discussion points

STECF Economic Reports: recap

- STECF EWG economic reports provide the most recent and comprehensive data and analyses on the profitability of the:
  - EU Fishing Fleet - annual
  - EU Aquaculture - biennial
  - EU Fish Processing sector – biennial



- Dedicated Data calls
  - Issued by DG MARE
  - Submitted by MS
  - Managed by the JRC

- Main Purpose/objective:
- Provide scientific advice to support the EU Common Fisheries Policy (CFP); reference data for socio-economic studies on EU fisheries
- Macroeconomic approach – main drivers and trends on the socio-economic performance of MS fleets

STECF Economic Reports: recap

- Other uses:
  - STECF EWGs, e.g., Balance between fleet capacity-fishing opportunities
  - EMFF – context indicators
  - Impact assessments, MAPs
  - Setting of TACs and quotas, evaluations
  - EU Blue economy report
  - Research
  - General public, EU Facts & Figures, MARE economic papers, etc…

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Annual Economic Report on the EU Fishing Fleet

- 2019 AER

  Two STECF EWG: 38 independent experts, 1 DG MARE and 3 JRC

  - Current time series: 2008 to 2017
  - Nowcasts: 2018 and 2019
  - 23 coastal member states
  - Population: all fishing vessels on the EU Fleet Register (1 January)
  - Fleet segment: fishing technique + vessel length group + supra-region
  - Fishing activity variables: landings and effort, by FAO sub-region (level 3 or 4)
  - Economic variables: employment, fuel consumption, income, costs, capital value, investments, debt

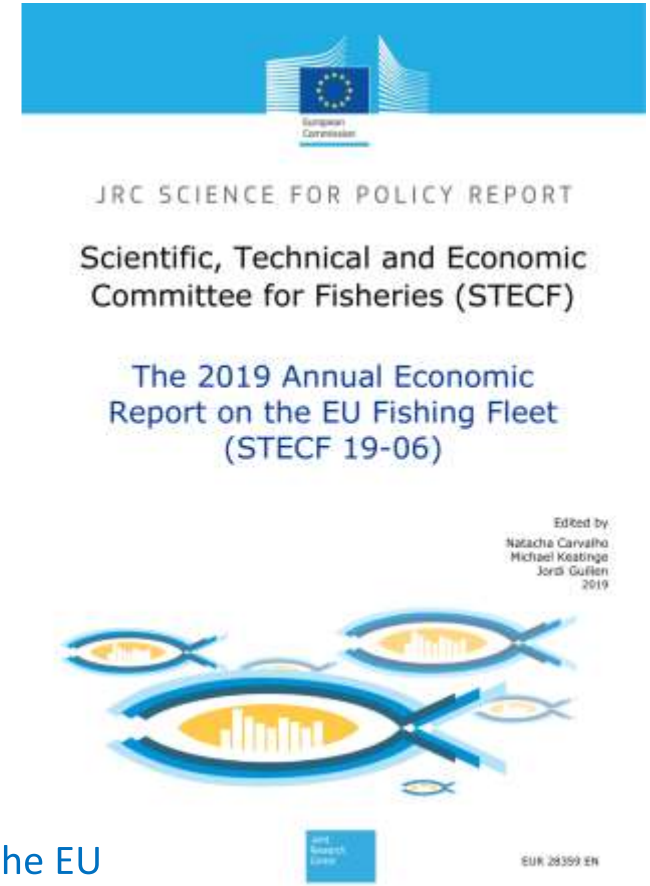
2019 AER CONTENTS

EXECUTIVE SUMMATRY

INTRODUCTION

(3) EU FLEET OVERVIEW

- Overview of the EU Fishing Fleet
- Economic Performance Indicators
- Resource Productivity and Efficiency
- EU Small-Scale Coastal Fleet
- EU Distant-Water Fleet and Outermost Region Fleets
- EU Pelagic Reference fleet
- Main drivers and trends affecting the economic performance of the EU fleet
- Assessment for 2018 and outlook for 2019 and beyond
- Data tables by MS and fishing activity



2019 AER - Contents

(4) EU Regional Analysis

- North Sea & Eastern Arctic
- Baltic Sea
- North Western Waters
- Southern Western Waters
- Mediterranean Sea
- Black Sea
- NAFO
- Other Fishing Regions (OFR): EU Outermost Regions (OMR) and Long Distant Fisheries (LDF - ICCAT, IOTC and CECAF)

(5) EU National Chapters

(6) METHODOLOGY

(5) DATA COVERAGE & QUALITY

ANNEXES

- CFP monitoring: Inclusion of economic indicators
- Economic performance at MSY
- Implementation of the Landing Obligation and Economic impacts

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Performance indicators

Profitability indicators

- Revenue

  Income from landings + other income

- Gross Value Added (GVA)

  Revenue – (energy costs + repair costs + other variable costs + non variable costs)

- Gross profit (GRP)

  GVA – (crew costs + unpaid labour)

- Net profit

  Gross profit – (annual depreciation + opportunity cost of capital)

Resource productivity and efficiency

- LPUE

  Income from landings + other income

- Fuel efficiency

  Energy costs / revenue (%)

- Fuel intensity

  Energy consumed / landed tonne

  Energy consumed / DAS

- Labour productivity

  GVA / FTE

- Capital productivity

  RoI, RoFTA

Performance analyses

Performance analyses done at several levels:

- EU Fleet

Unit

- Member State fishing fleets
- Main Fishing Regions and fisheries (10 + OMR)
  - Effort and Landing data provided by FAO sub-regions

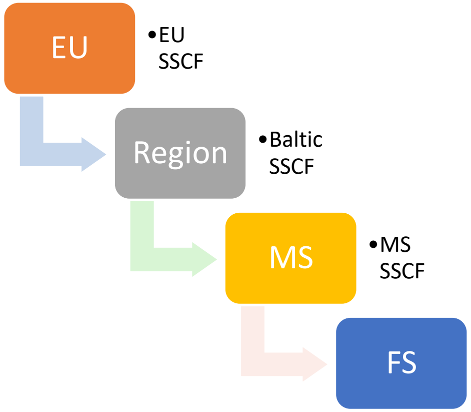
Geo-spatial

- Fishing activity
  - Small-scale costal fleet (SSCF)
  - Large-scale fleet (LSF)
  - Distant-water fleet (DWF)

Scale of operation

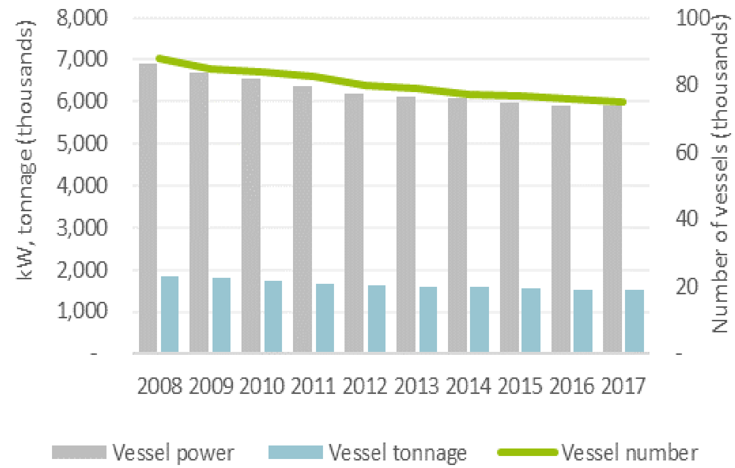
- Fleet segment
  - Main fishing technique + vessel length group fishing predominately in a major fishing region (NAO, MBS and OFR)

Unit

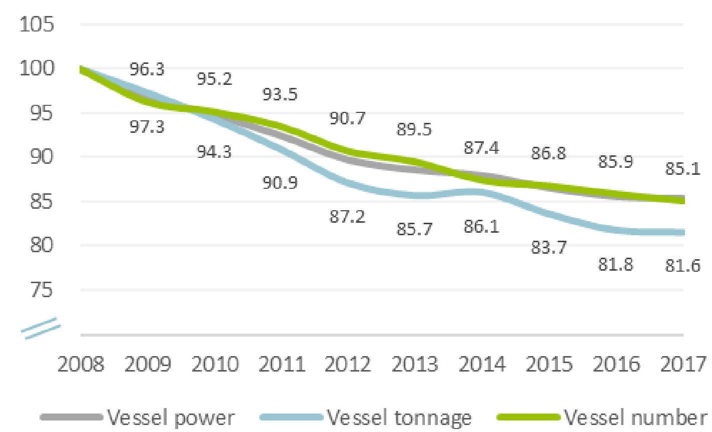


EU Fleet: Status and recent trends

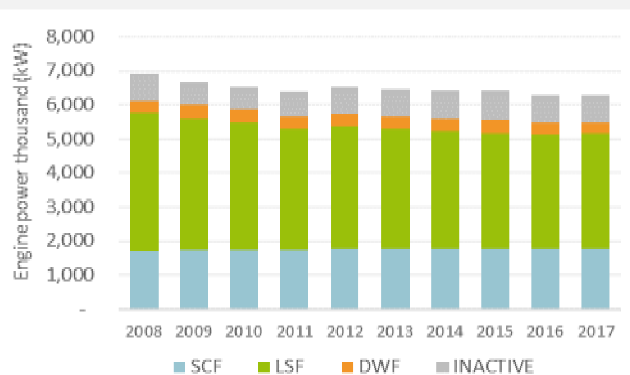
- Capacity
  - 83 323 vessels (79% active)
  - 75% SSCF / 24% LSF / <1% DWF
  - -15% in # and kW; -18% in GT



- GT SSCF 8%
- GT LSF 74%
- GT DWF 18%



- kW SSCF 32%
- kW LSF 62%
- kW DWF 6%



* Variations exclude Croatia

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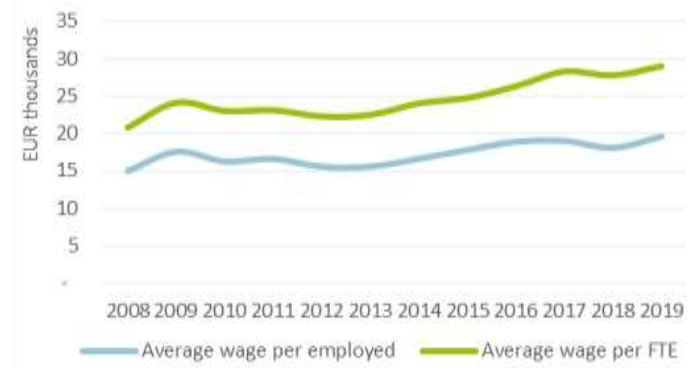
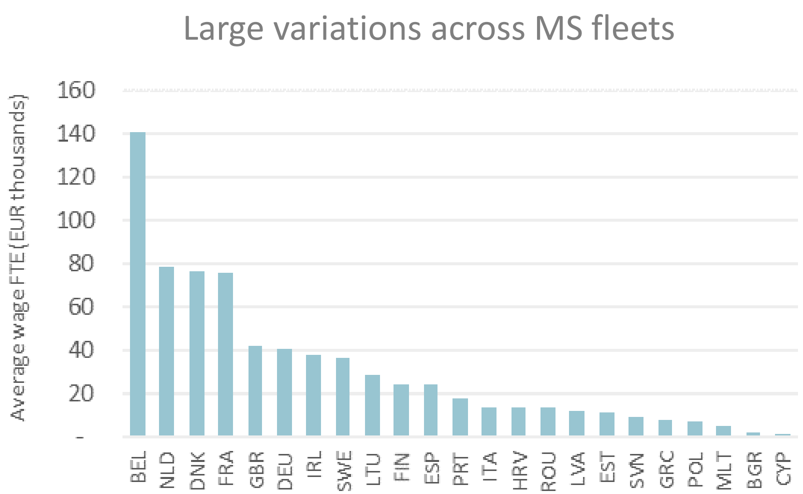
EU Fleet: Status and recent trends

- Employment, labour costs and average wage
  - 151 981 fishers (107 807 FTE)
  - 51% SSCF / 45% LSF / 4% DWF
  - -13% fishers and -15% FTE
  - **Labour costs** = € 2.5 billion (+19%)
  - **Average wage per FTE** = € 28 652 (+38%)

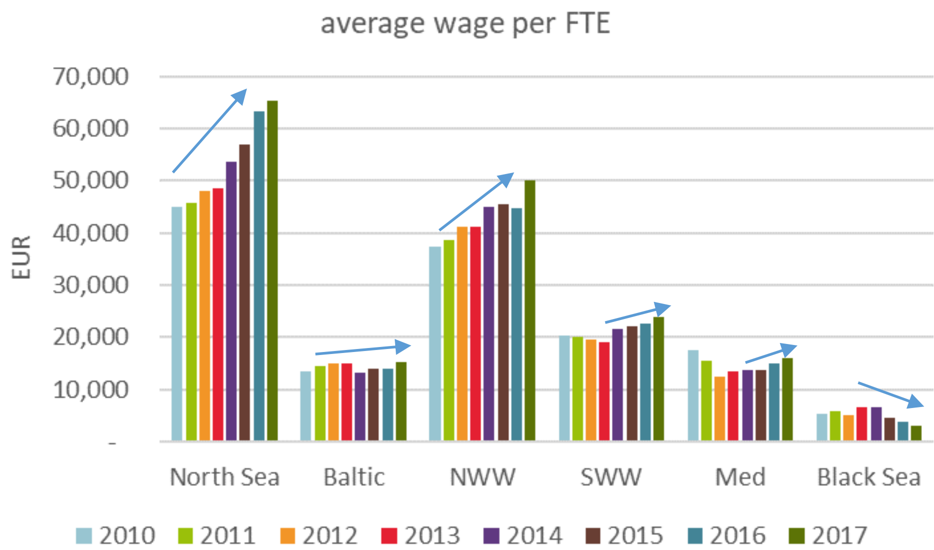


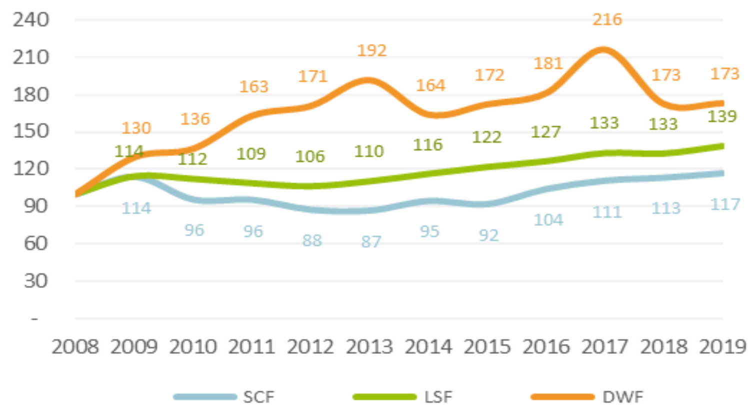


EU Fleet: Status and recent trends

- Employment, labour costs and average wage

Large variations across regions and fishing activity





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EU Fleet: Status and recent trends

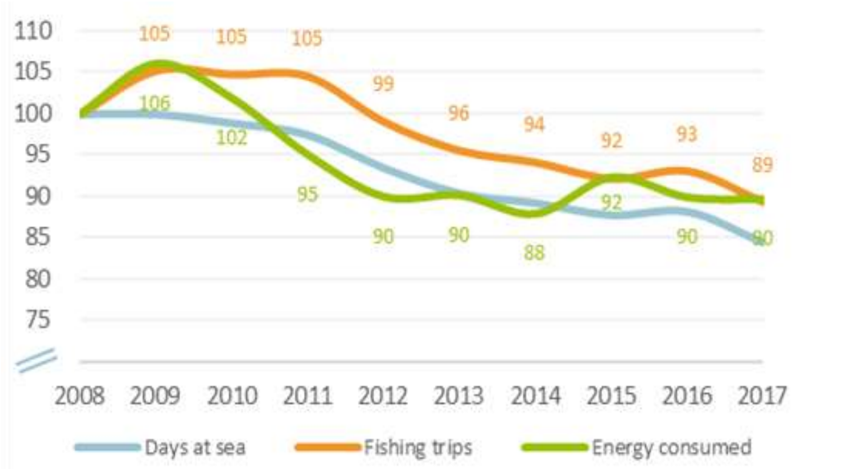
- Effort, fuel consumption and energy costs
  - 4.8 million DAS (-15%)
  - 2.25 billion litres (-10%)

428 litres/tonne

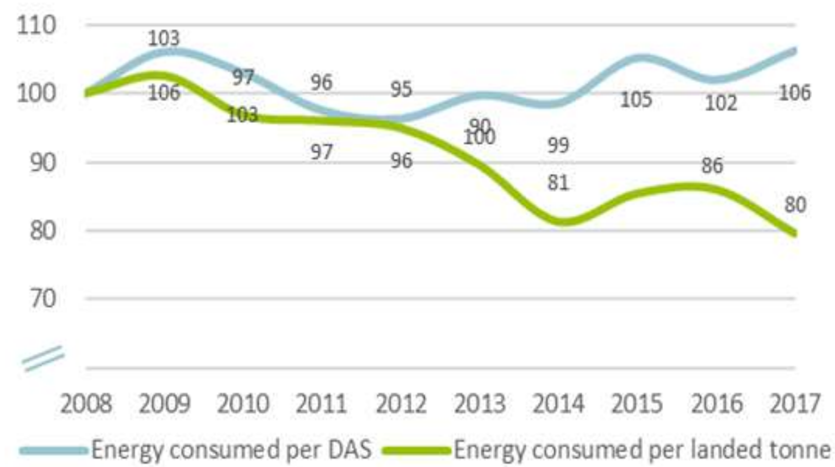
Average fuel price: €0.48 per litre

Energy costs: €1.1 billion (-38%)

Fuel costs to revenue: 13% down from 23.5% in 2008



Trends on average EU marine fuel price (EUR /litre)



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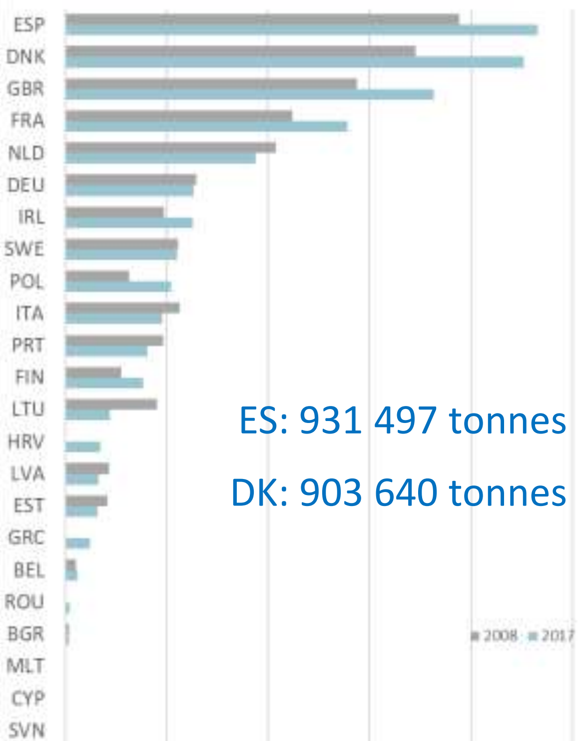
EU Fleet: Status and recent trends

- Landings and average price
  - Landed weight: 5 272 tonnes (+14%)
  - Landed value: € 7.6 billion (+6%)

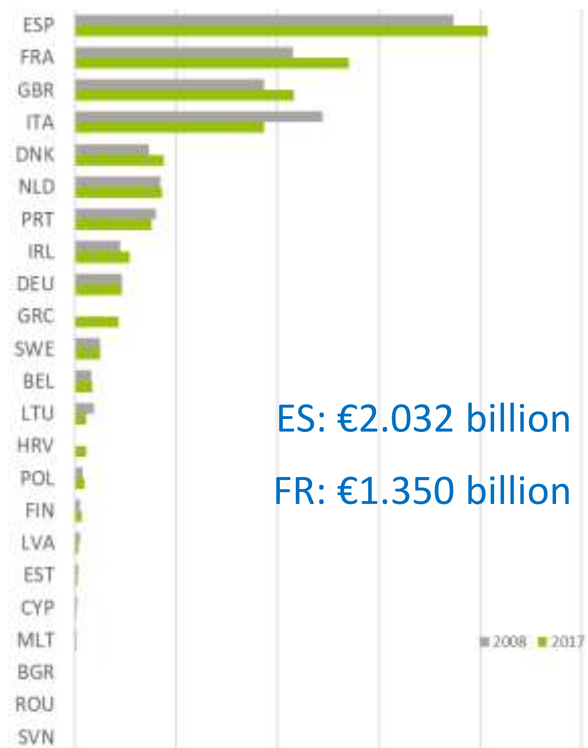
  Average price: € 1.4 – 1.6 per kg

Top producers



ES: 931 497 tonnes

DK: 903 640 tonnes

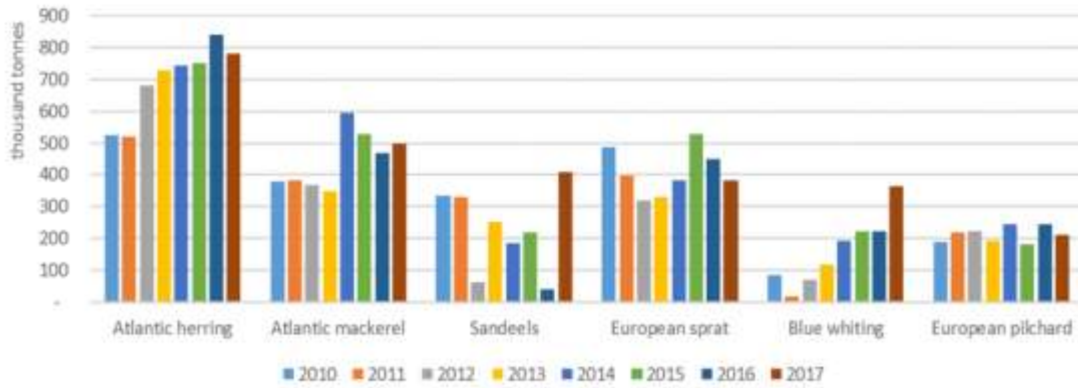


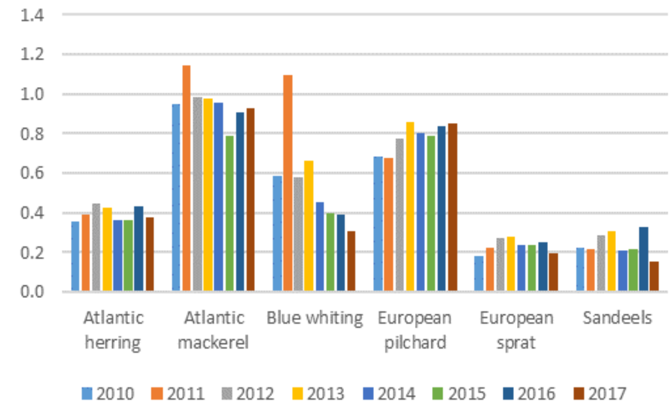
ES: €2.032 billion

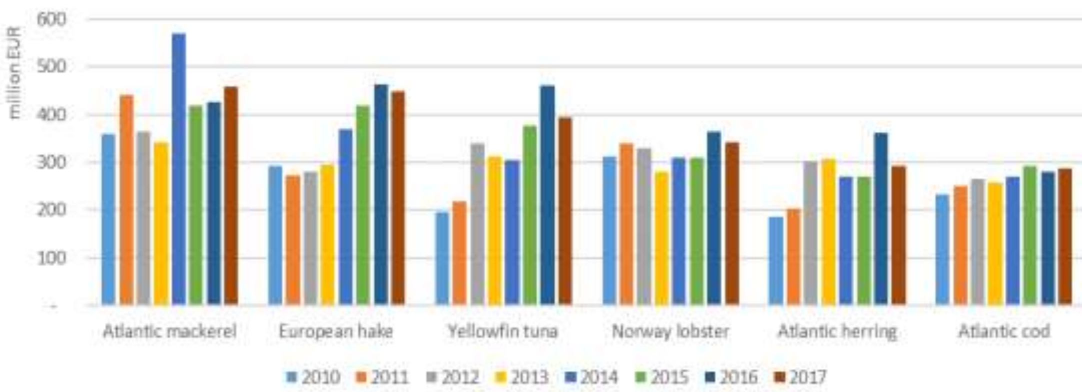
FR: €1.350 billion

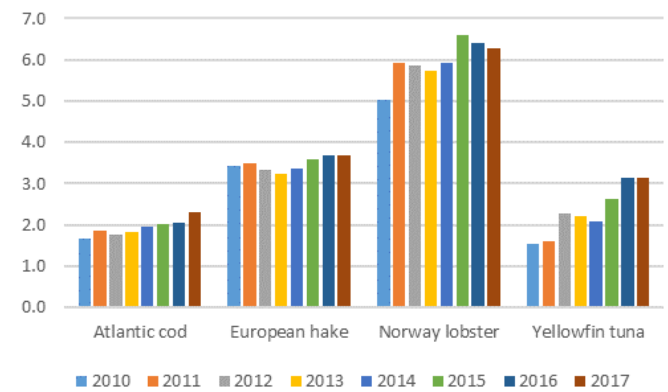
EU Fleet: Status and recent trends

- Top species landed and average price









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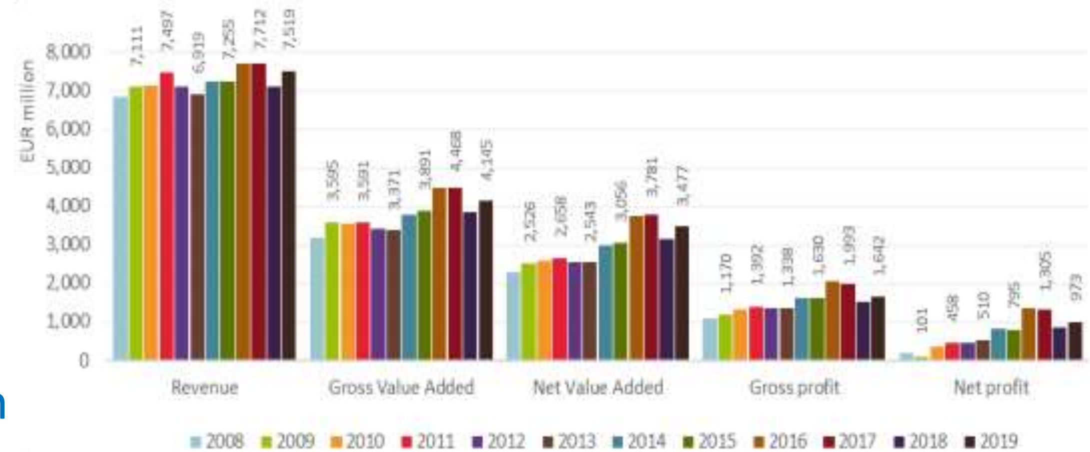
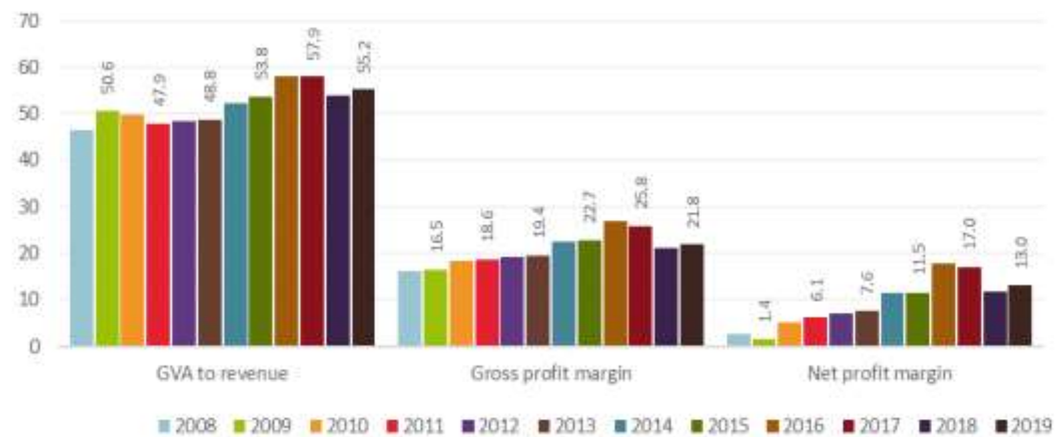
EU Fleet: Status and recent trends

- Economic performance

- Profitability of the EU fleet in 2017 stagnated (EUR 1.3 billion)
- Record high profits in 2016, (EUR 1.35 billion)
    - GVA = EUR 4.5 billion
    - Gross profits = 1.9 billion
- One MS suffered gross losses
- Four MS suffered net losses

Results also vary by scale of operation, fishing region and fleet segment.





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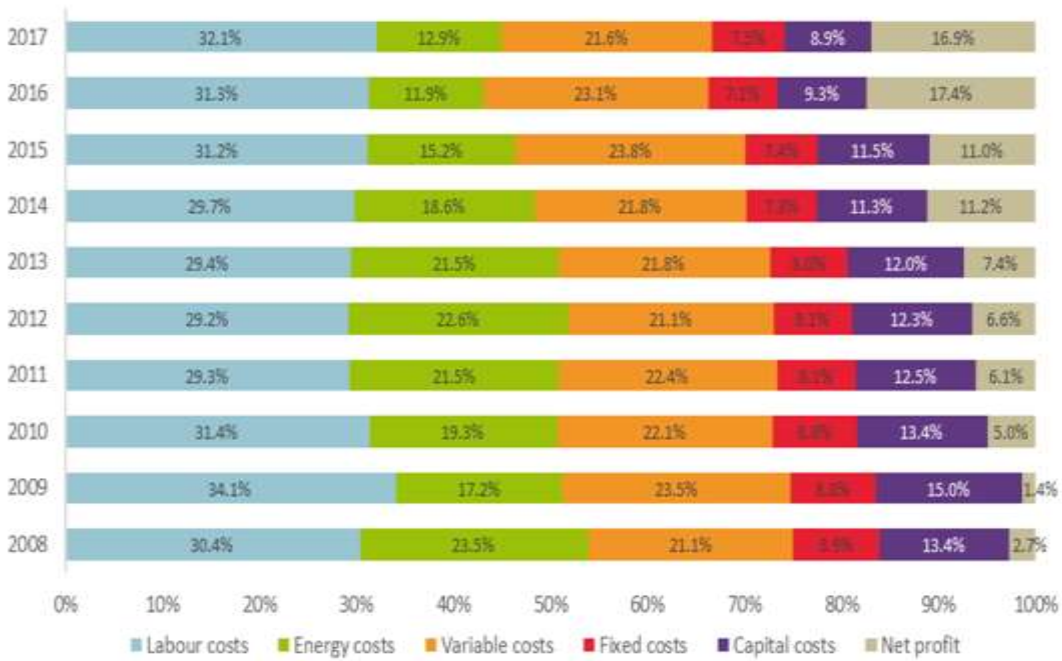
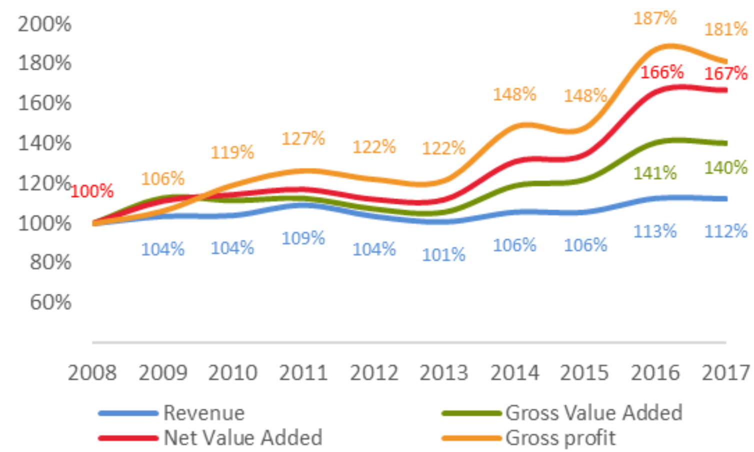
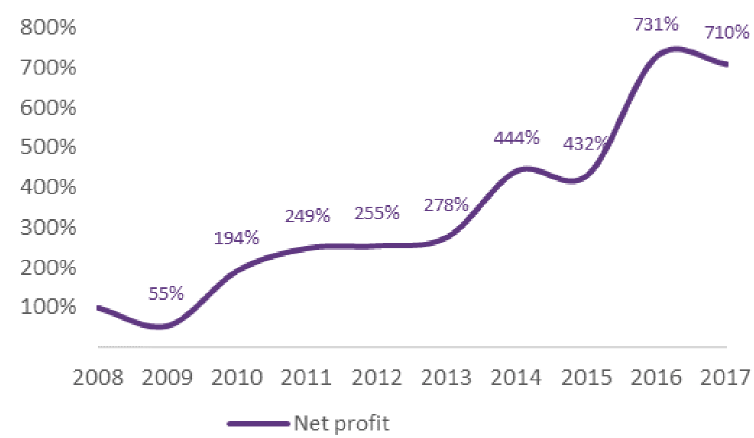
EU Fleet: Status and recent trends

- Cost structure
  - Increase in labour costs
  - Lower energy and capital costs







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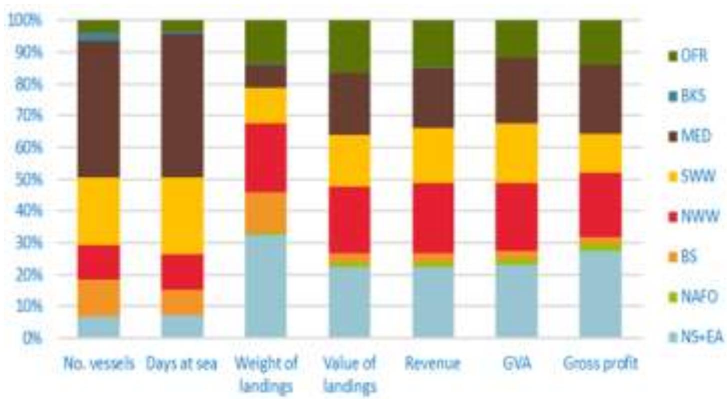
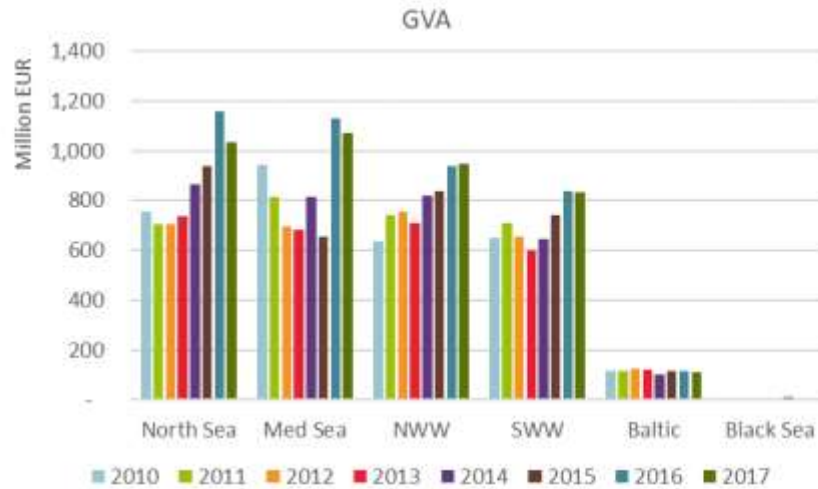
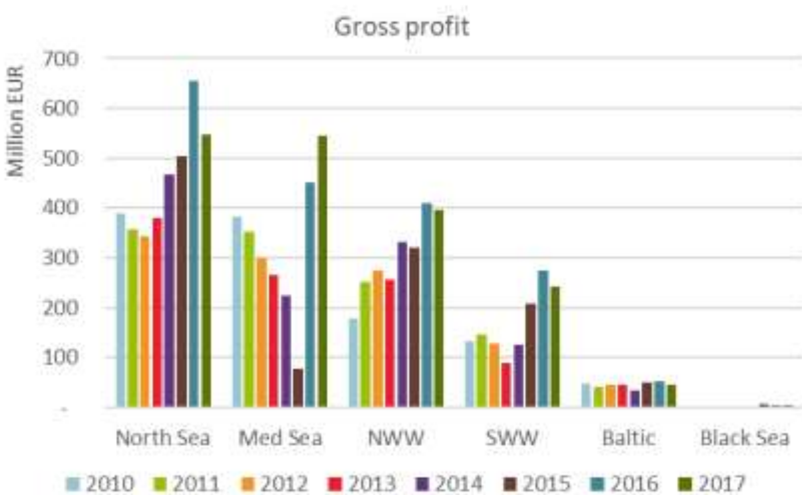
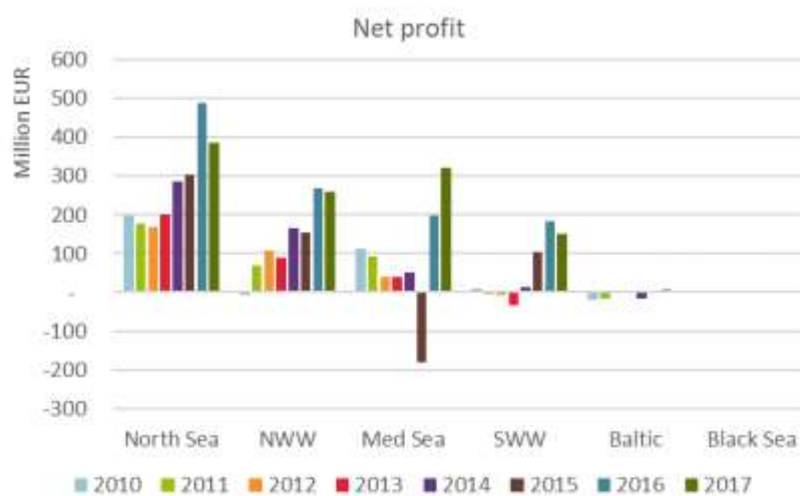
Performance by main Fishing Region

- Economic performance









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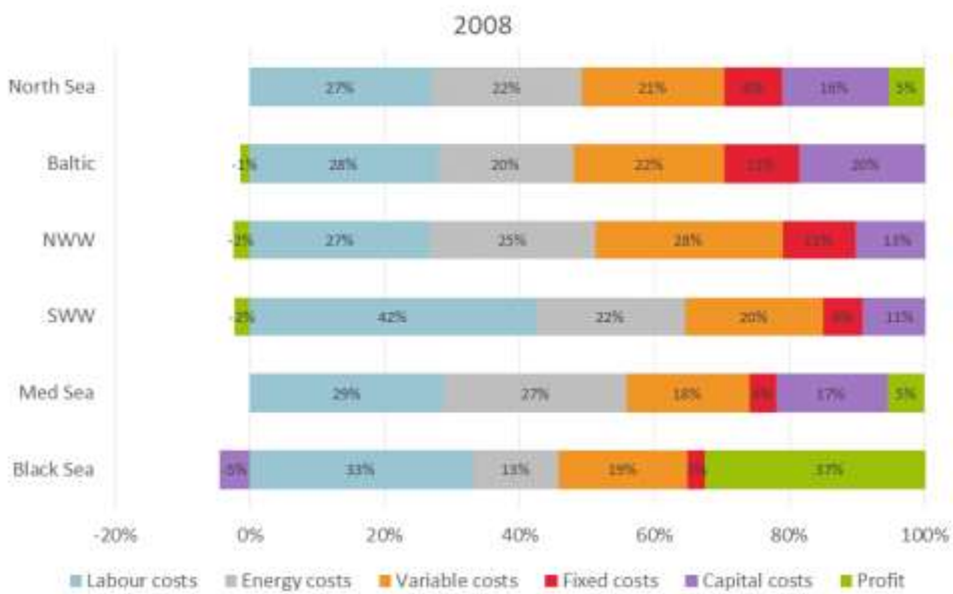
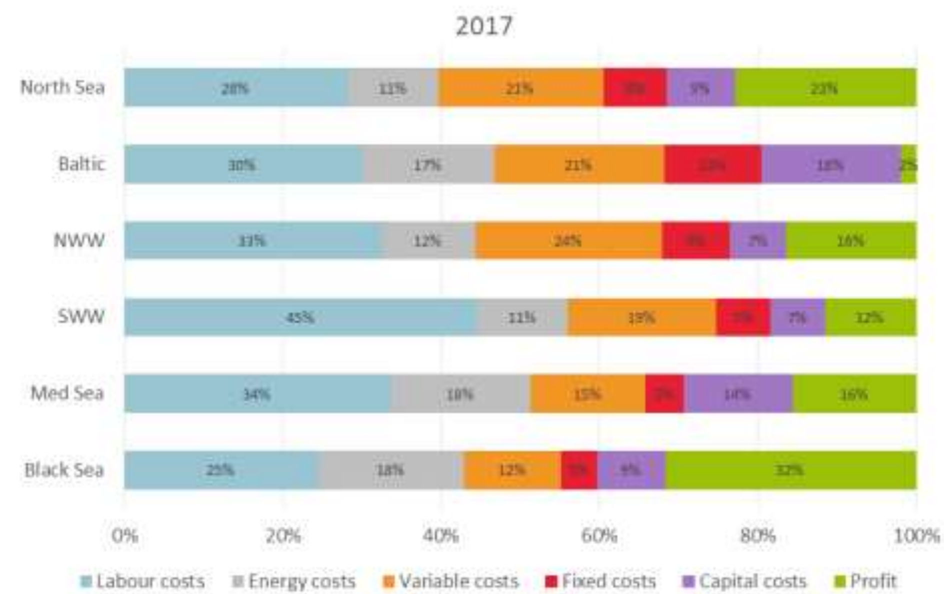
EU Fleet: Status and recent trends

- Cost structure – by region
  - Increase in labour costs
  - Lower energy and capital costs

✓ Improved performance





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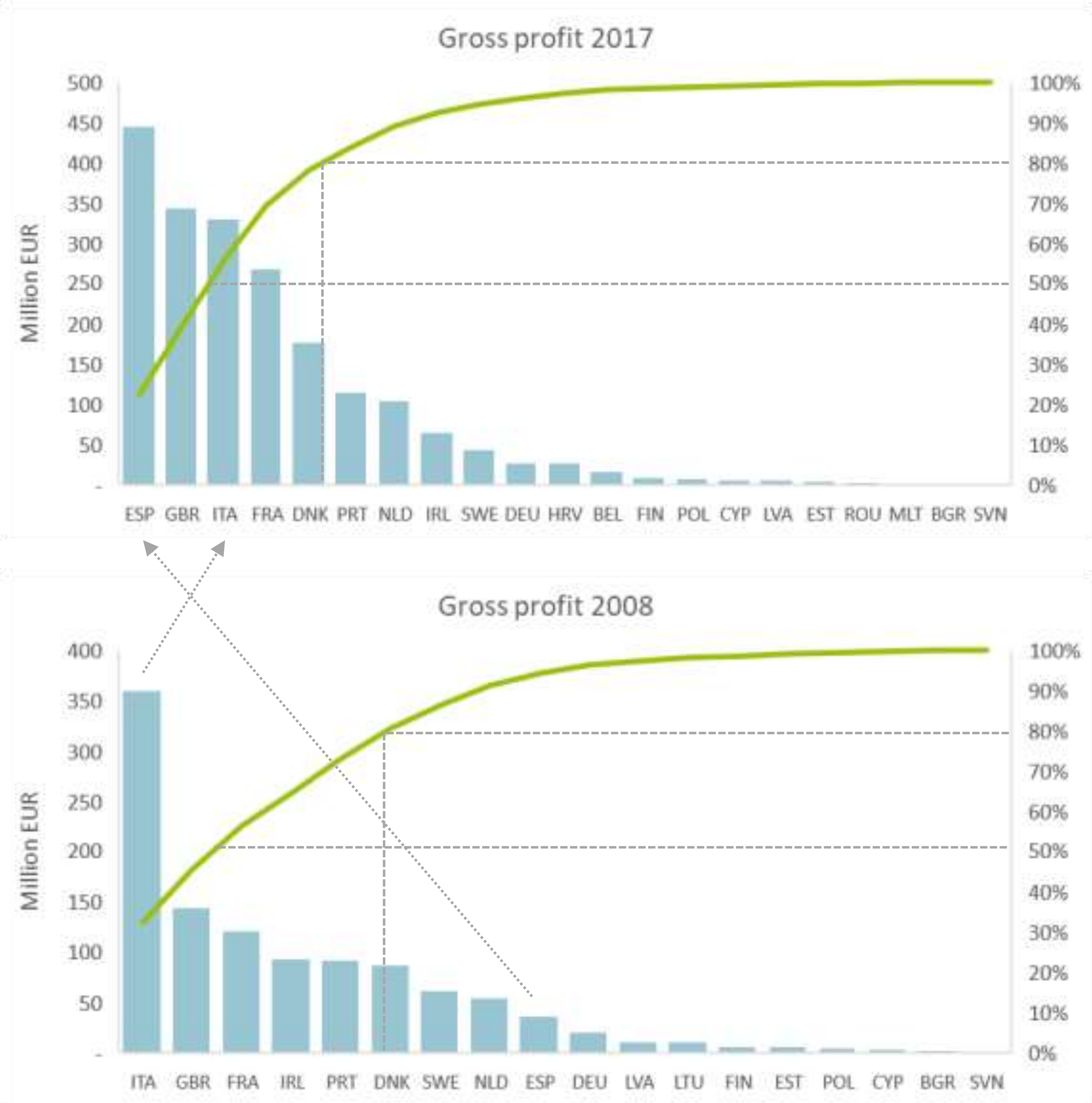
Performance by Member State fleets

ES, UK, FR fleets ⬆

IT, IE fleets ⬇

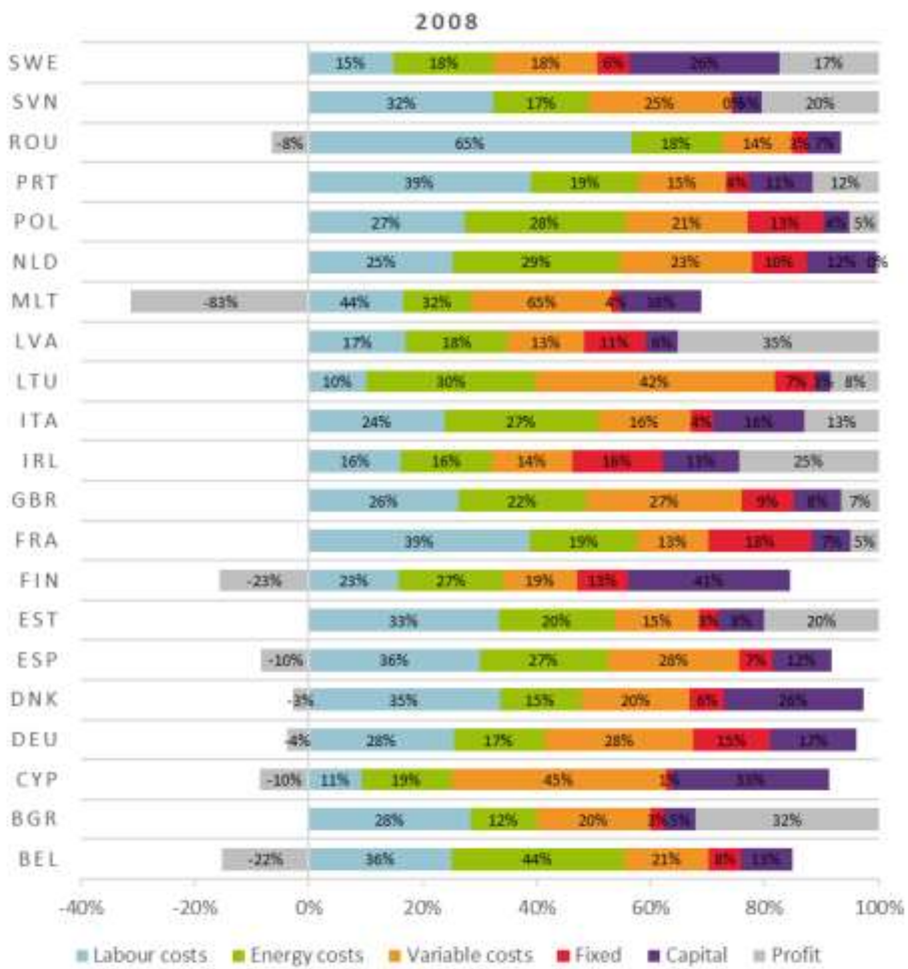
- 3 MS fleets generate over 50% of the profits
- 5 MS fleets generate 80% of the profits

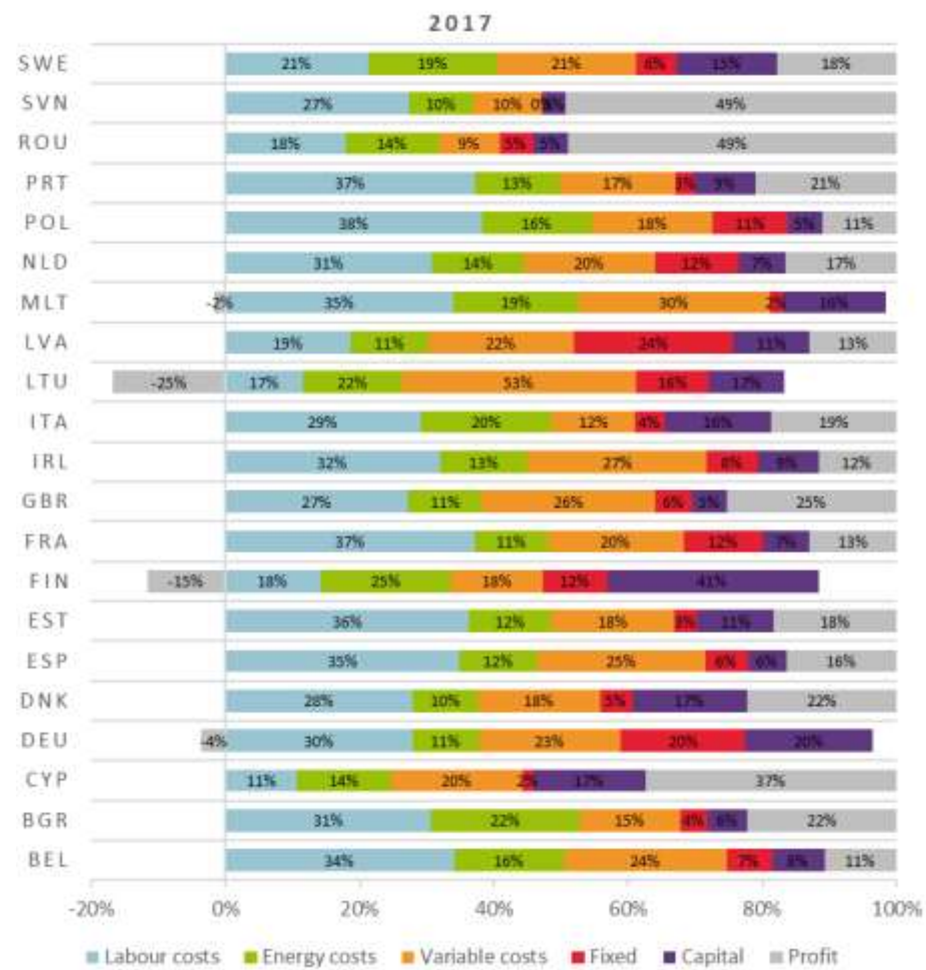


Performance by Member State fleets

- Cost structure by MS

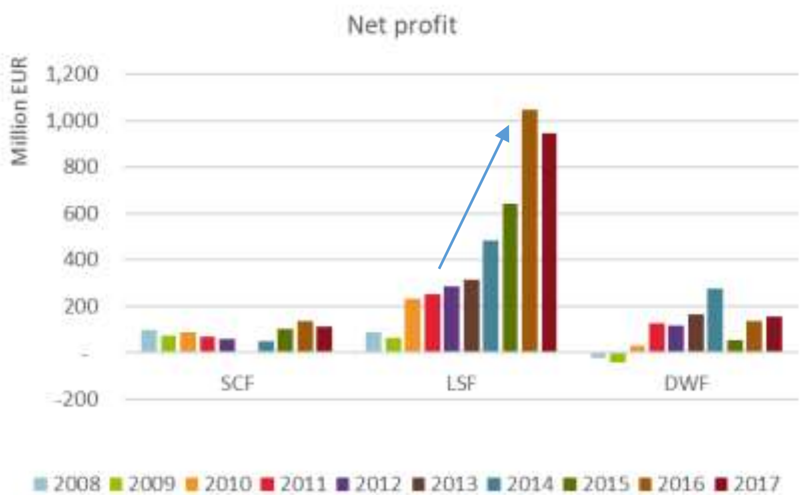
✓ Improved performance





Performance by scale of operation

- Performance of the EU fleet largely driven by the LSF
- SSCF rebounding slowly
- DWF - EU bilateral fisheries agreements



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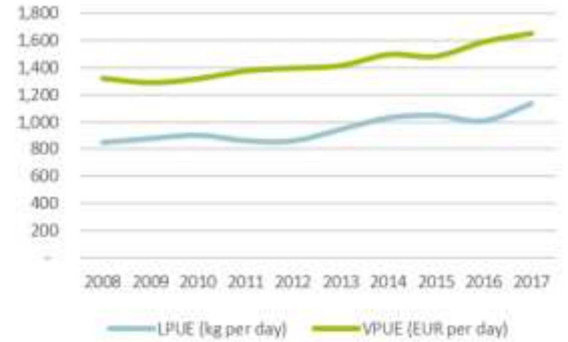
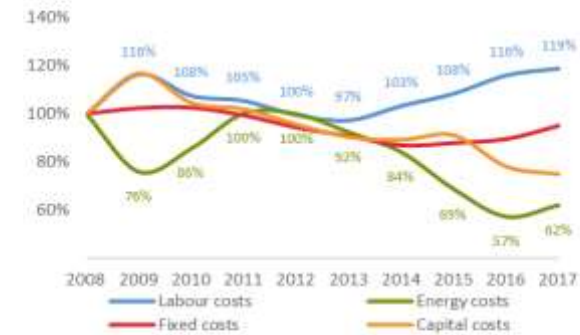
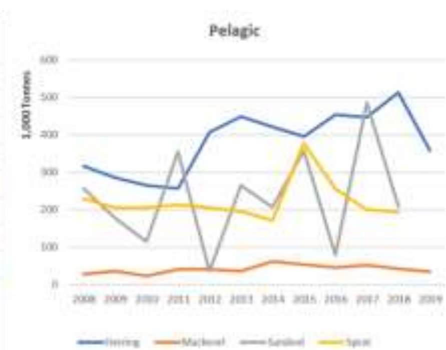
Key drivers affecting fleet performance

- ✓ Lower operating costs, e.g. fuel prices
- ✓ Capacity reduction
- ✓ Increased efficiency
- ✓ Higher first-sale prices
- ✓ Recovery of some fish stocks
- ✓ Increased TACs and quotas
- ✓ EMFF funding – value added
- ✓ Certification schemes and better marketing
- ✓ Research & Innovation, e.g. more selective gears, pulse technique



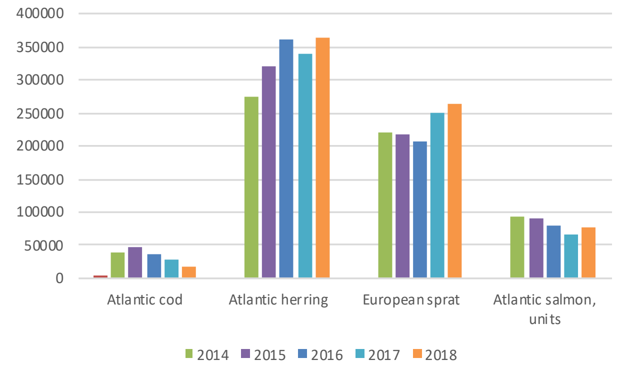




Key drivers affecting fleet performance

- × Reduced TACs and quotas
- × Poor status of stocks
- × Choke species, quota uptake
- × More vertical integration
- × Increased competition with recreational fishing and other marine uses
- × Aging fleet and crew
- × Investments

- The effects of Brexit, landing obligation and ban on pulse fishing technique are still to be seen.



		Germany	Denmark	Estonia	Finland	Lithuania	Latvia	Poland	Sweden
Atlantic cod	2014	45%	55%	10%	24%	24%	31%	55%	30%
	2015	60%	82%	12%	36%	46%	55%	75%	43%
	2016	55%	74%	0%	9%	55%	63%	72%	48%
	2017	52%	78%	0%	28%	70%	77%	60%	56%
	2018	71%	52%	0%	9%	42%	53%	56%	33%
Atlantic herring	2014	92%	94%	85%	87%	57%	92%	78%	79%
	2015	98%	46%	87%	74%	85%	98%	87%	70%
	2016	98%	89%	86%	82%	75%	97%	79%	89%
	2017	90%	87%	90%	77%	62%	100%	79%	71%
	2018	95%	90%	87%	86%	96%	99%	85%	91%
European sprat	2014	92%	88%	95%	93%	92%	94%	94%	97%
	2015	98%	95%	89%	100%	96%	97%	97%	100%
	2016	99%	96%	93%	100%	95%	100%	98%	99%
	2017	99%	90%	90%	100%	98%	98%	92%	98%
	2018	91%	90%	95%	100%	99%	100%	98%	91%
Atlantic salmon	2014	44%	95%	41%	83%	9%	13%	48%	95%
	2015	99%	78%	46%	87%	8%	22%	62%	100%
	2016	85%	44%	47%	76%	6%	16%	48%	108%
	2017	46%	13%	50%	74%	3%	18%	48%	83%
	2018	60%	32%	43%	81%	69%	77%	52%	90%
European plaice	2014	67%	63%		6%			28%	33%
	2015	99%	59%		1%			46%	35%
	2016	91%	52%		0%			36%	46%
	2017	87%	30%		0%			42%	6%
	2018	90%	44%					100%	25%

AER Nowcasting

- The Issue(s):
  - Economic data submitted with a two-year time lag (e.g. 2018 is the reference year in the 2020 AER)
  - Transversal variables 1 or 2-year time lag (preliminary data)
  - Need for up-to-date data to inform policy
- The solution(s):
  - Nowcasting' techniques to estimate n-1 and n (e.g. 2020 AER will nowcast 2019 and 2020)
  - Integrate known data (e.g. number of vessels) and preliminary data with proven relationship(s) with the dependent variables (e.g. crew wage and value of landings)
- The tool(s):
  - BEMEF model for the North Atlantic fisheries – TACs and quotas (known for n-1 and n)
  - JRC/DCF db for Mediterranean, Black Sea and OFR fleets – similar approach but based on effort and capacity changes (EU fleet register)
  - Other external known factors - fuel prices, interest and inflation, fish prices

AER Nowcasting

- **Nowcasting landings and prices**

- TACs are reported
- Relative stability calculated as the relative shares in year t.
- Quota swaps calculated using the difference with adapted quota in the FIDES dataset
- Fleet segment share is calculated based on the DCF landings.

- NAO fleets - % change in fish prices obtained by species for TAC species from EUMOFA using data on first sale prices for each MS averaged with the EU wide price (as not all landings are made to a fleet segment's flagged member state)

Landings weight (A27 fleet segments)

$$Landings\_weight_{t+1,f} = TAC\_Landings_{t+1,f} + Non\_TAC\_Landings_{t+1,f} \qquad \text{(eq. 2b)}$$

$$TAC\_Landings_{t+1,f} = TAC_{t+1} Relative\_stability_{m} Swaps_{t,m} Uptake_{t+1,m} Segment\_Share_{t,f}$$

$$Non\_TAC\_Landings_{t+1,f} = Non\_TAC\_Landings_{t,f} \frac{Sea\_days_{t+1,f}}{Sea\_days_{t,f}} \qquad \text{(eq. 2d)}$$

$$TAC\_Landings_{t+2,f} = TAC_{t+2,f} Relative\_stability_{m} Swaps_{t+1,m} Uptake_{t+1,m} Segment\_Share_{t,f}$$

(eq. 2e)

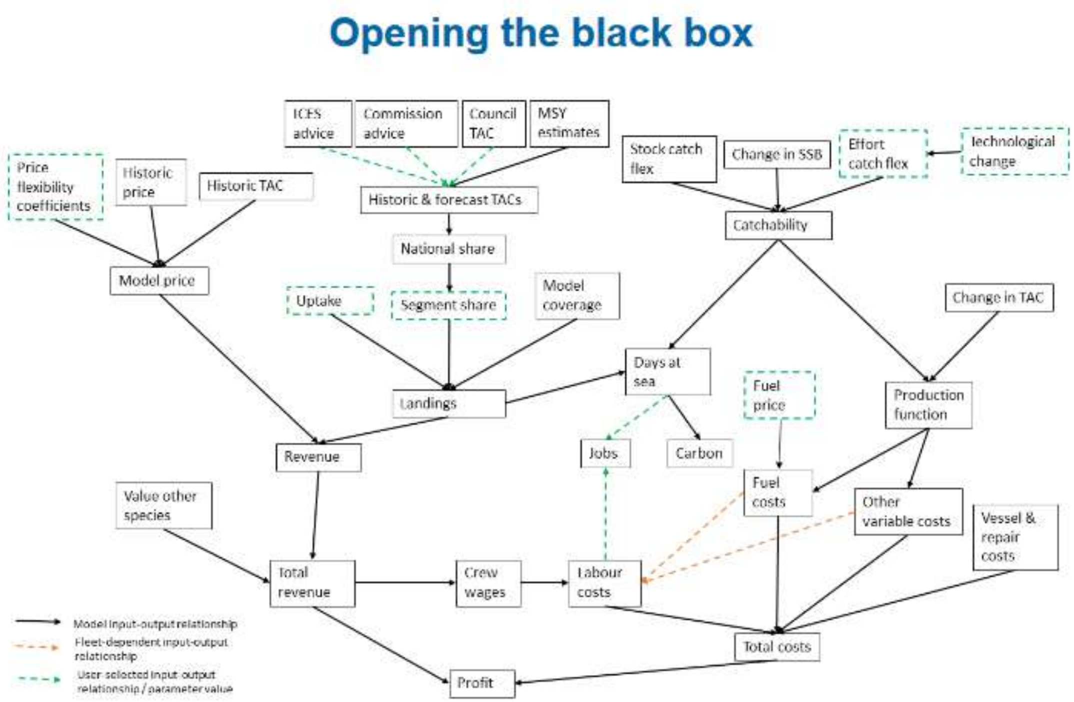
Landings value (A27 fleet segments)

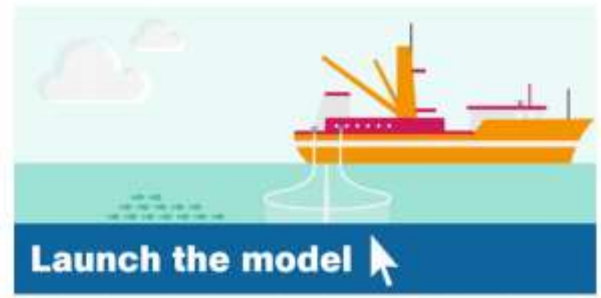
$$Landings\_value_{t+1,f} = Landings\_value_{t,f} \frac{Landings\_weight_{t+1,f}}{Landings\_weight_{t,f}} \times \frac{Fish\_price_{t+1,m,s}}{Fish\_price_{t,m,s}}$$

AER Nowcasting

Bio-Economic Model of European Fleets (BEMEF)

- Model in Excel and methodology available online
- Tailor built around the DCF data and JRC AER database
- Dynamic user-friendly interface allows for parameters to be adjusted, scenarios to be calculated, and trade-offs to be made visible





https://neweconomics.org

www.fisheriesmodel.org

AER Nowcasting

- **AER 2017 and 2018 nowcasts Vs AER 2019 results**

	GVA to revenue (%)							Gross profit margin (%)					Net profit margin (%)				
	2015	2016			2017			2015	2016		2017		2015	2016		2017	
EU fleet	**53.6**	**60.0**	**57.9**		**56.4**	**58.0**		**22.4**	**29.0**	**26.7**	**25.4**	**25.8**	**11.1**	**17.7**	**17.4**	**17.4**	**16.9**
BEL	50.6	57.0	57.0		53.3	52.6		17.0	21.5	25.1	20.2	18.5	7.8	13.9	17.7	12.2	11.4
BGR	65.8	58.5	57.7		56.7	58.7	↓ ↑	32.7	10.6	26.6	21.6	28.1	16.4	-3.5	4.2	14.1	21.3
CYP	15.4	19.0	20.3		35.1	64.7		0.6	2.2	2.0	19.7	54.0	-85.7	-75.6	-75.4	-24.0	29.0
DEU	55.8	59.9	60.8		60.5	46.6	↔ ↓	21.8	25.5	28.5	28.2	16.5	4.8	9.0	16.1	16.3	-2.4
DNK	69.5	71.4	70.5		70.8	67.4	↔ ↓	44.2	45.1	44.2	44.9	39.4	23.5	24.4	27.1	31.2	23.2
ESP	49.1	55.9	54.8		55.6	56.9		18.0	24.6	23.4	24.2	22.0	11.0	18.4	19.4	20.1	16.5
EST	63.5	69.6	67.0		66.8	66.0		24.9	31.3	30.7	30.4	29.7	7.7	19.5	15.7	22.7	18.5
FIN	41.2	45.7	48.3		49.6	44.3	↑ ↓	21.5	26.4	30.3	32.0	25.9	-22.7	-15.8	-11.1	-7.9	-14.9
FRA	54.5	57.4	57.1		48.7	57.0	↓ ↔	16.2	18.8	19.3	11.4	19.9	8.1	11.2	12.1	3.2	13.1
GBR	50.5	55.3	55.5		53.9	57.6	↓ ↑	24.9	29.2	30.0	28.4	30.4	17.0	22.4	24.9	24.2	25.9
HRV	40.5	59.9	46.5		47.1	59.6		-3.8	42.3	8.1	10.3	32.1	-43.7	-46.4	-34.1	-14.0	13.9
IRL	46.1	57.8	53.8		55.3	52.6	↑ ↓	13.7	24.4	23.2	24.8	20.7	-2.1	9.6	11.7	14.4	11.0
ITA	61.4	70.0	62.9		62.0	63.6	↓ ↑	30.5	38.9	31.1	30.2	34.6	11.8	20.8	13.4	13.2	18.0
LTU	-10.8	36.6	22.3		11.5	8.9		-22.6	25.8	9.2	0.8	-8.5	-37.6	17.6	-6.4	-6.1	-18.8
LVA	54.9	60.2	40.7	↑ ↓	46.9	43.0		36.4	41.6	23.8	29.2	24.3	28.2	33.6	17.5	24.8	14.0
MLT	47.5	44.7	40.6		49.6	49.2		17.2	13.0	-1.9	8.6	14.1	-6.8	-12.7	-25.1	-10.8	-1.6
NLD	48.7	61.1	60.2		55	54.2		18.2	29.9	28.0	23.4	23.5	8.9	23.0	20.4	15.3	17.0
POL	56.4	61.3	60.6		60.2	54.3		27.2	31.0	32.3	31.6	16.1	11.3	16.0	14.9	17.8	6.6
PRT	69.8	73.8	67.8	↑ ↓	68.4	67.1	↑ ↓	32.5	37.0	30.9	31.9	30.0	20.0	24.8	19.4	22.5	19.6
ROU	82.2	82.2	75.9	↑ ↓	68.3	72.0		69.4	69.9	58.3	50.2	54.1	60.6	61.3	44.3	32.9	43.3
SVN	76.8	79.8	83.0		82.4	80.2		29.5	33.0	48.7	47.6	52.7	12.0	18.4	41.9	43.3	50.4
SWE	54.9	59.8	53.4	↑ ↓	55.4	54.0		32.8	37.2	31.2	31.9	32.8	13.2	21.8	19.2	16.0	18.8
		Nowcast			Nowcast				Nowcast		Nowcast			Nowcast		Nowcast	

Price analysis in the AER

- **Data availability / limitations**
  - Landings in weight by fleet segment, FAO species and sub-region
  - Landings in value by fleet segment, FAO species and sub-region
  - Preliminary data for n-1

>3760 species
>450 fleet segments

- **Average price**
  - Landings in value / landings in weight
  - by fleet segment, FAO species and sub-region

The value of landings provided by MS are often already calculated as: average price x landed weight

- **Information / data gaps**
  - Data resolution - size grade, quality, markets (e.g. fresh, non-human consumption)
  - Annual – seasonal variations
  - Export / imports
  - Aquaculture
  - Demand
- **Modelling fish prices – not feasible within the AER / EWGs**

European Commission

Discussion points

- How can the MAC help and other possible areas for cooperation
  - Pre-analyze results and provide feedback
  - Participation in the STECF EWGs (AER 2) with in-depth knowledge and insight on factors affecting performance
  - Advise on international and EU markets, trade deals, possible shocks that may affect the sector, etc.
  - Foresight on the development of markets and prices beyond nowcasts (qualitative if not quantitative)
  - Liaise more with national authorities on data quality assurance
  - ….

European Commission

Thank you very much. Stay in touch

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