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EFFECT OF FUEL PRICE HIKE ON SMALL FISHERMAN POVERTY LEVELS IN SOUTHERN SULAWESI

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ABSTRACT: This study aims to determine the positive or negative impact of rising prices of fuel on the activities of fishermen fishing effort and how the effects on family poverty level small-scale fishermen in southern Sulawesi. The analysis is revenue and expenditure, the business profit analysis as well as analysis of income and expenditure fishermen families. The results showed a result of price increase of fuel oil (BBM), the price of consumer goods rise and lead to inflation. So fishermen must add the cost of Rp 10 788. However, the increased receipts received Rp 16367. Thus, increases in the price of fuel oil (BBM) had a positive impact for the fishermen for fishermen profit of around Rp 5.579. Impact against fishing activities such as operating time, the frequency of fishing / catching trip, a distance of fishing areas (Fishing Ground) unchanged. While the impact on the household economy seen from household expenditure greater

Keyword : small fisherman, fuel price, poverty level, South Sulawesi

INTRODUCTION

Currently the role of petroleum in economic activities is very large. The phenomenon of global oil price fluctuations can be observed in 10 years last year. In the interval between 2002 and 2005, world oil prices to move quickly and rose more than 100%, from US \$ 20 to reach US\$ 50s per barrel. In 2007, the condition is getting worse by the rate of increase is very sharp, exceed US \$ 100 per barrel, even nearly touched \$ 140 per barrel in June, 2008. [1] In Indonesia, the government will give subsidies for fuel allocated from the state budget, so that people can buy fuel cheaper. But the reality now that oil prices have risen so the government can not sell fuel to the public at the same price as before, because it can cause the burden of the budget for subsidies to higher oil, therefore the government took steps to raise fuel price. The peak occurred in 2013, the government increased the price of fuel oil (BBM) subsidy of premium to Rp 6,500 per liter rose to Rp 2,000 and Rp 5,500 per liter of diesel rose to Rp 1,000. One group of people who obtain the direct impact of rising fuel prices are coastal fishing communities. Fishermen are a community with the lowest income levels compared to other business sectors. For the fisherman, the fuel is an important component in their operations, which in turn affects the price of marine products. With policies to raise the fuel has an impact on any activity that uses the fuel as one of the raw materials business, including the activities of fisheries. Event capture fisheries is one sector activities of fisheries that use motorized boats which mostly use diesel fuel. the farther Fishing ground or fishing areas, the more fuel used by motor boats is proportional to the magnitude of the power capacity of the ship. So with the rise in fuel prices is very influential on the income of fishermen and indirect effect on production costs and the rise in prices of goods, consumption goods which then affects the income and poverty levels fishermen. [2-5]

AIM OF RESEARCH

Based on the formulation of the problem above, the purpose of this research is:

1. Knowing the positive or negative impact of rising prices of fuel (BBM) on the activities of small-scale fishermen fishing effort
2. Examine the impact of fuel price hike on fishing effort and economic activity of household small fishing

RESEARCH METHODS

Location and Time Research

This research was conducted in the District of North Galesong, Takalar, South Sulawesi province from January to February 2014. Of the 10 villages in the district of North Galesong, only 6 villages where research was conducted for six villages are coastal areas. These villages are: Village Aeng Stones, Bonto Lanra, Bontolebang village, village Tamalate, Tamasaju village, and Bonto Sunggu. [6;7]

Data Collection

Sampling technique is a method data collection. To determine the samples to be used in research, the sampling technique used was simple random sampling is a sampling technique of population was randomly freely because the population is considered homogeneous. This sampling technique part of Probability Sampling. Probability Sampling is a sampling technique that provides equal opportunity for each element (members) were elected as members of the population sample [8]

Respondent taken to meet the minimum criteria for the study were acceptable, ie. 10% of the total population and for a very small population required a minimum of 15%-20% of the total [6;9]

Data Analysis

Analysis of Operating Revenues

Total revenue approximated by the following equation (Soediono, 1993: 105):

$$TR = P \times Q$$

Where :

TR = Total Revenue, P = Price and Q = quantities

Meanwhile, in order to calculate the total as follows:

$$TC \text{ (Total Cost)} = TFC + TVC$$

TFC = Total Fix Cost,

TVC = Total, Variable Cost

for calculating net income as follows:

$$\pi = TR - TC$$

π = Revenue, TR = Total Revenue and TC = Total Cost

Business Expenditure Analysis

Business expenditure is the total cost to be incurred by fishermen fishing boat outboard motors on motor boat trip in one arrest. Such expenditures include variable costs and fixed costs. For variable costs include: fuel expenses, groceries, ice blocks, cigarettes, and more. While fixed costs include: ships, nets, and other machinery.

Fuel Cost Component Analysis Expenditure

Fuel cost component expenditure is expenditure that is used to buy fuel to do business in one trip arrest. The study compared the percentage of the fuel cost component of the total cost before and after the increase in fuel prices

Analysis of Household Income

The income in question is income before and after the increase in fuel prices, so that income after the price hike in accordance with the time doing the research. Household income consists of operating revenues fishing and not fishing. Household income is calculated using the formula (referred to in the Main, 2006):

$$R_t = R_p + R_{NP}$$

Where:

R = Revenue (Revenue), R_t = Total household income, R_p = Revenue from fishery business, and R_{NP} = Revenue from non fisheries Household

Expenditure Analysis

Total household expenditure can be formulated as follows (referred to in the Main, 2006):

$$C_t = C_m + C_{NM}$$

Where:

C_t = total household expenditure, C_m = Spending on food, and C_{NM} = Expenses for non-food

[10;11]

ANALYSIS AND DISCUSSION

A. Impact of Price Increases Fuel Economic Activity Against Fish Fishermen Fishing Enterprises Outboard Motor

1. Revenues and expenditures Per Business Trip

Acceptance of fishing effort is obtained from the sale of the catch, the catches (Kg or Basketball) multiplied by the price of fish (USD). Fishing effort based data collection in March or in peak season. Fishing season there are 3 kinds peak season (March to June) and season average (July to September) and a dry season (October to February).

Table 2. Average Revenue Per Trip Fishery Catch Motor Paste Before and After Price Hike Fuel

No.	Fishing gears	Average (Rp)			Percentage (%)
		Before	After	Change	
1	bottom longline	114.375	128.750	14.375	12.95
2	Crab Trap	131.818	151.818	20.000	15.37
3	Longline	111.667	124.167	12.500	11.20
4	Trawl	84.000	100.100	16.100	19.00
5	Drifting nets	331.818	356.818	25.000	8.18
6	Squid fishing rods	80.000	87.500	7.500	9.38
Average		142.280	158.192	16.367	12.83

January-February

Source: Primary Data Processed 2014.

Table 3. Average Expenditure Per Trip Fishery Fishermen Catch Motor Paste Before and After Price Hike Fuel

No.	Fishing gears	Average (Rp)			Percentage (%)
		Before	After	Change	
1	bottom longline	36.625	47.000	10.375	28.15
2	Crab Trap	36.455	48.091	11.636	32.04
3	Longline	38.417	49.417	11.000	28.42
4	Trawl	39.300	51.400	12.100	30.52
5	Drifting nets	65.909	78.273	12.364	18.81
6	Squid fishing rods	24.750	32.000	7.250	29.01
Average		40.243	51.030	10.788	27.83

Source: Primary Data Processed 2014

The average expenditure before and after the increase in fuel prices is USD 67 348 and USD 79 931, while the average change of Rp 12 583, up 18.76%

2. Operating Revenue Per Trip

The revenue of the fishery in question is income derived from fishing business trip one arrest. Operating revenues obtained from the difference between business receipts per trip with the business expenses per trip. Operating revenues every fisherman fishery varies depending on the gear they use

Table 4. Average Revenue Per Trip Fishing Fishermen Fish Motor Paste Before and After Price Hike Fuel (BBM) 2014.

No.	Fishing Gears	Average (Rp)			Percentage (%)
		Before	After	Change	
1	bottom longline	77.750	67.375	10.375	14.50
2	Crab Trap	95.364	83.727	11.636	14.26
3	Longline	73.250	62.250	11.000	16.26
4	Trawl	44.700	32.600	12.100	28.34
5	Drifting nets	265.909	253.545	12.364	5.18
6	Squid fishing rods	55.250	48.000	7.250	13.30
Average		102.037	91.250	10.788	15.31

Source: Primary Data Processed 2014

The average change in revenue per trip fishing effort after the increase in fuel prices (BBM) amounting to Rp 10 788 or up 15:31%.

3. Expenses Cost Component Fuel

Expenditure components of the cost of fuel oil (BBM) is the cost of fuel oil (BBM) for the purpose of fishing effort in one trip arrest. In gear spare parts and machinery. Comparison of fuel cost component expenses to total expenses is also changing. The amendment becomes one factor increasing total costs. Because fuel oil (BBM) in this case gasoline is needed by fishermen fishing very risky if the price increases. This will affect the reception and welfare of fishermen

Table 5. Comparison of Percentage of Average Fuel Cost Component in Total Expenditures Before and After Price Hike Fuel

No	Fishing Gears	Average cost fuel to total cost		
		Before	After	Change
1	bottom longline	34.13	38.49	4.36
2	Crab Trap	54.17	59.23	4.16
3	longline	41.23	46.37	4.86
4	Trawl	39.58	43.91	4.33
5	Drifting nets	28.65	34.82	6.77
6	Squid fishing rods	45.03	50.46	5.43
Average		40.47	45.55	4.99

Source: Primary Data Processed 2014.

cost component expenditure on expenses before and after the increase in fuel prices was 40.47% and 45.55%, while the average of the change of 4.99%. Differences in the average percentage of the fuel cost component of the total cost of expenditure is influenced by Jark fishing areas and the time it takes to do one trip arrest.

Table 6. Average Expenditure Components Fuel Costs Before and After Price Hike Fuel (BBM) 2014

No.	Fishing Gears	Average (Rp)		
		Before	After	Change
1	bottom longline	12.375	17.875	5.500
2	Crab Trap	19.636	28.364	8.727
3	longline	15.750	22.750	7.000
4	Trawl	15.545	22.455	6.909
5	Drifting nets	18.900	27.300	8.400
6	Squid fishing rods	11.250	16.250	5.000
Average		15.576	22.499	6.923

Source: Primary Data Processed 2014.

Total fuel consumption every fisherman is not reduced or not increased. Because every fisherman fishing areas vary in accordance with their fishing gear. Clarify that fuel price hike is not too influential in the long term to fishermen.

B. Impact of Increase in Fuel Fishermen Again Household Income

1. Operating Revenues Fisheries

The revenue of the largest fishery occurs on drift net fishing before the price increase of fuel oil (BBM) amounting to Rp 3,190,909 / month dropped to Rp 3,042,545 / month after the increase in fuel prices (petrol) whereas the smallest fishing business income suffered by fishermen squid fishing Rp 884 000 / month to Rp 768,000 / month or decreased after the increase in price of fuel oil (BBM).

Table 7. Average Revenue Per Month Fisheries Before and After Price Hike Fuel.

No.	Fishing Gears	Average Income (Rp)		Average Income change	
		Before	After	(Rp)	(%)
1	bottom longline	1.244.000	1.078.000	166.000	14.50
2	Crab Trap	1.490.909	1.282.909	208.000	16.75
3	longline	1.172.000	996.000	176.000	16.26
4	Trawl	1.072.800	782.400	290.400	28.34

5	Drifting nets	3.190.909	3.042.545	148.364	5.18
6	Squid fishing rods	884.000	768.000	116.000	13.30
Average		1.509.103	1.324.976	184.127	15.72

Source: Primary Data Processed 2014

The most important factor affecting the fishermen's income per month is the amount of fishing effort in a month trip. Fishermen trawl fishing gear to experience the highest percentage change in revenue when compared to other fishermen because of the number of trips arrest fishermen trawl gear more than others, which is 24 trip. While others only 16 trips per month Lost fisherman nets have higher incomes than others, so they are rarely go to the sea for income one trip can be used in the next 3 days.

2. Operating Revenues Non Fishing

Operating revenues are revenues non fishing activities outside the fishing industry. The income of fishermen from non-fisheries is derived from plantation workers or farmers, employees of the store, a housekeeper, and a sell-sales (small shop). Of the 50 respondents there are only 10 who have a business respondent non fishery.

Table 8. Average Revenue Per Month Non Fisheries Before and After Price Hike Fuel 2014.

No.	Fishing Gears	Average operation Revenue non fisheries (Rp)		Average Change in revenue	
		Before	After	(Rp)	(%)
1	bottom longline	416.667	433.333	16.667	4.00
2	Crab Trap	250.000	200.000	-50.000	-20.00
3	longline	0	0	0	0.00
4	Trawl	250.000	300.000	50.000	20.00
5	Drifting nets	250.000	316.667	66.667	26.67
6	Squid fishing rods	0	0	0	0.00

Source: Primary Data Processed 2014

Based on the above table that the business income of non largest fishing contained in the fishing line fishing Rinta' as one of the fishermen have a family member who worked as a store clerk, housekeeper with an average income of Rp 433 333 increased by USD 16 667 from US \$ 416 667 after the increase in prices fuel oil (BBM). The condition shows that the average increase in the income of fishermen from non fisheries sector unchanged at the income of fishermen from the fisheries sector. This difference is due to the non-fisheries sectors do not use BBM

3. Total Household Income

The decline in the value of total household income each fisherman is evidence that the impact of the rising price of fuel oil (BBM) effect in increasing costs. In addition, the value of the smallest family income suffered by fishermen who had family members there who work so rely on fishing effort and usually the family by the age of marriage has recently (Family Young). When compared with the fishing families who have family members who work on non fishing effort

Table 9. Average Total Household Income Before and After Price Hike Fuel (BBM) 2014.

No.	Fishing Gears	Average income Household (Rp)		Average Change income	
		Before	After	(Rp)	(%)
1.	bottom longline	1.400.250	1.240.500	159.750	13.46
2.	Crab Trap	1.559.091	1.337.455	221.636	16.34
3.	longline	1.172.000	996.000	176.000	16.26
4.	Trawl	1.097.800	812.400	285.400	27.43
5.	Drifting nets	3.259.091	3.128.909	130.182	4.60
6.	Squid fishing rods	884.000	768.000	116.000	13.30
Average		1.562.039	1.380.544	181.495	15.23

Source: Primary Data Processed 2014

Household Expenditure Fishermen Catch

1. Expenditure on Food

Increased expenditure after the food price hike of fuel oil (BBM) experienced by all respondents. Both the expenses of food and non-food. The value of food expenditure after the increase in the price of fuel oil (BBM) experienced by fishermen drift nets an average of US \$ 1,931,818 from US\$ 1,536,364 while the smallest value of food expenditures after the increase in price of fuel oil (BBM) experienced by fishermen fishing squid an average of Rp 975,000 from Rp 887,500. As for the food expenditure rakkang-rakkang fishing, longline, fishing Rinta and trawl average of Rp 1,204,545 to Rp 1,059,091, Rp 1.025 million from US \$ 908 333, US \$ 1,150,000 from US \$ 1.00625 million and Rp 1,125,000 of Rp 970,000

Table 10. Average Expenditure Per Month Food Before and After Price Hike Fuel (BBM) 2014.

No.	Fishing Gears	Average Expenditure Per Month Food (Rp)		Average change expenditure	
		Before	After	(Rp)	(%)
1.	bottom longline	1.006.250	1.150.000	143.750	14.96
2.	Crab Trap	1.059.091	1.204.545	145.455	14.09

Source: Primary Data Processed 2014

Experienced by fishermen drift nets an average of US \$ 559 909 from US \$ 559 000 while the smallest expenditure experienced by fishermen fishing squid average of USD 51 250 from 68750 USD. Household expenditure on non-food, mostly declining as much as 36 respondents (72%), there were 9 respondents (18%) were unchanged and there were 5 respondents (10%) experienced an increase for the non-food expenditure

Table 11. Average Non Food Expenditure Per Month Before and After Price Hike Fuel

No.	Fishing Gears	Average Non Food Expenditure Per Month (Rp)		Change expenditure	
		Before	After	(Rp)	(%)
1.	bottom longline	123.125	114.375	8.750	7.15
2.	Crab Trap	115.909	107.273	8.636	9.55
3.	longline	107.500	98.333	9.167	9.68
4.	Trawl	77.500	60.500	17.000	21.94

5.	Drifting nets	554.545	545.455	9.091	1.53
6.	Squid fishing rods	68.750	51.250	17.500	24.99
Average		174.555	162.864	11.691	12.47

Source: Primary Data Processed 2014.

Based on the table, the average spending on non food before and after the increase in the price of fuel oil (BBM) of Rp 174 555 and US \$ 162 864, while the average change in non-food expenditure of Rp 11 691, down 12:47%

3. Household Expenditure

The average total household expenditure largest post rising prices of fuel oil (BBM) is a drift net fishermen Rp 2,477,273 from US \$ 2,099,909 while the average household expenditure experienced by the smallest squid fishing rod Rp 1.02625 million from USD 956 250

Table 12. Average Cost and Total Domestic before and after the rise in price of fuel 2014.

No.	Fishing Gears	Average Cost and Total Domestic (Rp)		Change total expenditure	
		Before	After	(Rp)	(%)
1.	bottom longline	1.129.375	1.264.375	135.000	12.52
2.	Crab Trap	1.175.000	1.311.818	136.818	11.91
3.	longline	1.015.833	1.123.333	107.500	10.58
4.	Trawl	1.047.500	1.185.500	138.000	13.03
5.	Drifting nets	2.090.909	2.477.273	386.364	18.79
6.	Squid fishing rods	956.250	1.026.250	70.000	7.38
Average		1.235.811	1.398.092	162.280	12.37

Source: Primary Data Processed 2014.

Of dependents and family members also affect household spending fisherman. In general, the greater the revenue and the number of household dependents increasingly BESA also household expenditures on food and non-food.

4. Inequality of Income and Expenses

After the increase in price of fuel oil (BBM) occurs a discrepancy between revenue and expenditure. Earned income households is lower than the expenditure incurred. Before the price hike of fuel oil (BBM) median household income of fishermen Rp 1,562,039 and the average household expenditure fishermen Rp 1,235,811. After the increase in price of fuel oil (BBM) median household income of Rp 1,380,544 fishermen and fishermen household expenditure of Rp 1,398,092. it appears that after the increase in the price of fuel oil (BBM) household income of fishermen smaller than the household expenses. More clearly seen in the following table

Table 13. Comparison of Revenue, Expenditure and Income Before and After Price Hike Fuel

No	Average	Before (Rp)	After (Rp)	Change (Rp)	Percentage (%)
1	Revenue	142.280	158.192	16.367	12.83
2	Cost	40.243	51.030	10.788	27.83
3	Income	102.037	91.250	10.788	15.31

4	Household expenditure	1.235.811	1.398.092	162.280	12.37
5	Household income	1.061.256	1.235.227	173.971	15.67

Source: Primary Data Processed 2014

Most will recognize this discrepancy and some respondents said that to overcome it they usually owe it to the shop or store. There is also a fisherman who owe money to the neighbors or to Squire/Papalele/Retainer. When they receive sustenance from the sea, then be paid. Condition debt makes many fishermen can not invest or save. In fact, many children of fishermen who quit school to find work for food. Most children of fishermen who drop out of school immediately go to work with his parents as a fisherman

CONCLUSION

1. Due to the increase in the price of fuel oil (BBM), the price of consumer goods rise and lead to inflation. So fishermen must add the cost (cost) amounted to USD 10 788. However, the increased receipts received Rp 16 367. Thus, increases in the price of fuel oil (BBM) had a positive impact for the fishermen for fishermen profit of around Rp 5,579.

2. The impact on fishing activities such as operating time, the frequency of fishing / catching trip, a distance of fishing areas (Fishing Ground) unchanged. While the impact on the household economy seen from household expenditure greater Rp 1,398,092.00 compared with household income of Rp 1,235,227.00.

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