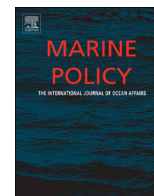




ELSEVIER

Contents lists available at ScienceDirect

Marine Policy

journal homepage: www.elsevier.com/locate/marpol

Measuring the multiregional economic contribution of an Alaska fishing fleet with linkages to international markets[☆]

Edward C. Waters^a, Chang K. Seung^{b,*}, Marcus L. Hartley^c, Michael G. Dalton^b

^a Consultancy, Beaverton, OR, USA

^b Resource Ecology and Fisheries Management Division, Alaska Fisheries Science Center, National Marine Fisheries Service, National Oceanic and Atmospheric Administration, 7600 Sand Point Way NE, Seattle, WA 98115-6349, USA

^c Northern Economics, Inc. 880 H Street, Suite 210, Anchorage, AK 99501, USA

ARTICLE INFO

Article history:

Received 24 April 2014

Received in revised form

29 June 2014

Accepted 1 July 2014

Keywords:

Economic contribution

Alaska head and gut fishing fleet

Multiregional social accounting matrix model

ABSTRACT

The Alaska head and gut (H&G) fishing fleet, a major component of the Bering Sea Aleutian Islands region (BSAI) groundfish fisheries, was recently rationalized under Amendment 80 (A80) to the BSAI groundfish fishery management plan. Economic impacts from H&G sector activities occur not only in Alaska but also extend to other U.S. regions via economic linkages with economic agents in those regions. Using a multiregional social accounting matrix (MRSAM) model of three U.S. regions (Alaska, West Coast, and rest of USA), the multiregional contribution of the H&G industry is estimated, and multiregional impacts of selected shifts in H&G sector production are evaluated in terms of changes in output, employment and income. Results indicate that the A80 H&G fleet vessels are important participants in Alaska fisheries, that more than half of the impacts from the H&G fleet on total output and about 80% of the impacts on household income accrue outside Alaska, and that the H&G fleet is relatively insensitive to variations in world prices of its primary products.

Published by Elsevier Ltd.

1. Introduction

1.1. North Pacific fisheries

The North Pacific fisheries off the coast of Alaska supply a significant portion of the seafood products that are traded in world markets. In 2009, about 52% [1.84 million metric tons (mt)] of the total U.S. commercial fishing capture harvest of 3.64 million mt, or 34% (\$1.3 billion) of the total \$3.9 billion landed value, came from this region. In terms of weight, Alaska's landings represented about 2% of the estimated worldwide capture harvest of 89.59 million mt in that year [13]. In 2010, the Alaska seafood industry directly accounted for about 2.9% of total state employment of 323,410 jobs, and about 2.1% of \$15.4 billion total state earnings [2]. A study by the Alaska Department of Fish and Game [1] shows that in 2001 Alaska's seafood industry, including both harvesting and processing sectors, accounted for more than

16% of the state's basic sector employment, and more than 47% of private basic sector employment, ahead of oil and gas, mining, forest products, and tourism. By way of comparison, in 2009 the total harvests of fish (only capture fisheries) by Norway and Iceland were 2.69 mt and 1.16 mt, respectively [5]. Fisheries represented 0.5% (2012) and 4.8% (including aquaculture, 2008) of gross domestic product (GDP) for these two countries, respectively. In 2009, total number of workers in the fish harvesting industry in Norway was 13,200. In 2008 the number for Iceland was 4300 (including aquaculture) [6].

In 2009, first wholesale revenues from the North Pacific groundfish seafood products fell by 17% to \$1.8 billion from about \$2.2 billion in 2008 (Table 1). While change in the status of key stocks played a role (e.g., reductions in total allowable catch (TAC) for pollock and Pacific cod), production of groundfish products during the period declined by only 8% from 651,000 mt in 2008 to 597,000 mt in 2009 (Table 2). Therefore other factors must have also contributed to the decrease in revenues. Total (dollar-denominated) revenues might have fallen due to factors such as exchange rate fluctuations, allocation shifts between sectors, change in product mix, or reductions in prices received for certain products. Since North Pacific groundfish products are mainly exported, global market conditions may have contributed to the negative effects that dominated in 2009. Similar trends were observed in 2010 as total groundfish fishery production

[☆]OMB Disclaimer: The findings and conclusions in the paper are those of the authors and do not necessarily represent the views of the National Marine Fisheries Service, NOAA.

* Corresponding author.

E-mail addresses: edwaters@hotmail.com (E.C. Waters), Chang.Seung@noaa.gov (C.K. Seung), marcus.hartley@norecon.com (M.L. Hartley), Michael.Dalton@noaa.gov (M.G. Dalton).

Table 1

Alaska processors' first wholesale revenues by species group 2008–2010 (\$ million).

Source: AKFIN and COAR data extracts.

Year	Atka mackerel	Flatfish	Pacific cod	Pollock	Rockfish	Sablefish	Other species	Total groundfish	Total all species
(A) All Alaska processors									
2008	46.5	196.4	432.1	1357.5	39.6	117.0	1598.6	2189.1	3787.7
2009	65.5	148.3	258.9	1190.1	37.7	104.1	1426.9	1804.7	3231.7
2010	70.6	175.3	340.5	1046.0	58.5	118.8	1896.1	1809.6	3705.7
Average	60.9	173.3	343.8	1197.9	45.3	113.3	1640.5	1934.5	3575.0
(B) Non-A80 Alaska catcher-processors									
2008	0.0	18.9	194.3	624.3	0.9	11.5	46.9	849.9	896.8
2009	0.0	15.4	133.9	433.9	0.9	12.3	23.5	596.4	619.9
2010	0.0	21.6	155.5	495.5	1.8	10.1	30.4	684.5	714.9
Average	0.0	18.6	161.2	517.9	1.2	11.3	33.6	710.2	743.9
(C) A80 H&G catcher-processors									
2008	46.5	156.8	33.5	13.0	26.9	3.0	1.2	279.7	280.9
2009	65.5	115.2	21.6	11.1	25.6	2.6	0.5	241.7	242.2
2010	70.3	138.5	30.4	11.2	43.0	3.6	0.6	297.0	297.6
Average	60.8	136.8	28.5	11.7	31.9	3.1	0.8	272.8	273.6
(D) Share of total Alaska processor wholesale revenues earned by A80 H&G catcher-processors									
2008	100.0%	79.9%	7.8%	1.0%	68.0%	2.5%	0.1%	12.8%	7.4%
2009	99.9%	77.7%	8.4%	0.9%	68.0%	2.5%	0.0%	13.4%	7.5%
2010	99.7%	79.0%	8.9%	1.1%	73.6%	3.0%	0.0%	16.4%	8.0%
Average	99.9%	78.9%	8.3%	1.0%	70.4%	2.7%	0.0%	14.1%	7.7%

Table 2

Alaska processors' net weight produced by species group 2008–2010 (1000 t).

Source: AKFIN and COAR data extracts.

Year	Atka mackerel	Flatfish	Pacific cod	Pollock	Rockfish	Sablefish	Other species	Total groundfish	Total all species
(A) All Alaska processors									
2008	26.7	128.4	104.2	363.7	18.2	9.7	252.6	650.7	903.3
2009	39.6	118.2	90.3	321.6	18.8	8.9	252.4	597.4	849.8
2010	38.1	137.2	110.6	345.5	24.3	7.9	290.2	663.6	953.8
Average	34.8	127.9	101.7	343.6	20.4	8.8	265.1	637.2	902.3
(B) Non-A80 Alaska catcher-processors									
2008	0.0	13.4	45.1	148.6	0.2	1.0	5.9	208.3	214.3
2009	0.0	10.5	47.6	120.5	0.2	1.0	3.3	179.8	183.1
2010	0.0	15.4	48.0	141.7	0.4	0.7	4.1	206.2	210.3
Average	0.0	13.1	46.9	137.0	0.3	0.9	4.4	198.1	202.6
(C) A80 H&G catcher-processors									
2008	26.7	102.2	9.3	8.4	13.2	0.3	0.6	160.1	160.7
2009	39.6	95.2	11.6	7.9	13.9	0.5	0.4	168.8	169.1
2010	37.9	110.4	12.9	8.4	18.2	0.3	0.4	188.1	188.5
Average	34.7	102.6	11.3	8.2	15.1	0.4	0.5	172.3	172.8
(D) Share of total Alaska processor wholesale revenues earned by A80 H&G catcher-processors									
2008	100.0%	79.6%	8.9%	2.3%	72.8%	2.8%	0.2%	24.6%	17.8%
2009	99.9%	80.6%	12.8%	2.5%	74.0%	6.2%	0.2%	28.2%	19.9%
2010	99.6%	80.5%	11.7%	2.4%	74.7%	3.9%	0.1%	28.3%	19.8%
Average	99.8%	80.2%	11.1%	2.4%	73.9%	4.3%	0.2%	27.0%	19.1%

increased to 664,000 mt (Table 2) while first wholesale revenues were still 17% below their 2008 levels at about \$1.8 billion (Table 1).

1.2. The amendment 80 trawl head and gut fleet

The head and gut (H&G) fleet is a major participant in Bering Sea–Aleutian Island region (BSAI) non-pollock groundfish fisheries. Of the total catch processed in the North Pacific during 2008–2010, on average the A80 H&G fleet accounted for nearly 100% of Atka mackerel, 80% of flatfish, 74% of rockfish, 11% of

Pacific cod, 4% of sablefish and 2% of pollock (Table 2). In 2009, total first wholesale revenues from harvesting and processing of groundfish species by the H&G fleet fell 14% to \$242 million from \$280 million in 2008 (Table 1). Over the same period the total net weight of H&G groundfish products sold rose 5% from 160,000 mt to 169,000 mt (Table 2). In 2010, first wholesale revenues rebounded to \$297 million while total net weight sold climbed to 188,000 mt.

The H&G fleet was rationalized in 2008 under Amendment 80 (A80) to the BSAI groundfish fishery management plan (FMP), which allocated quota shares to owners of non-AFA (American

Download English Version:

<https://daneshyari.com/en/article/10506792>

Download Persian Version:

<https://daneshyari.com/article/10506792>

[Daneshyari.com](https://daneshyari.com)