Identifying high-value market opportunities for farmed oysters

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INTRODUCTION

- The U.S. oyster market is highly heterogenous. This creates opportunities and barriers with respect to increasing revenue for oyster growers

- The oyster market has two distinct market segments
  1. A high-value oysters on the half-shell market
  2. A lower-valued shucked oyster market where most of the wild U.S. oysters go, and where there is also strong import competition

- Within these segments, there are significant potential for variation in prices as size, flavor etc. varies

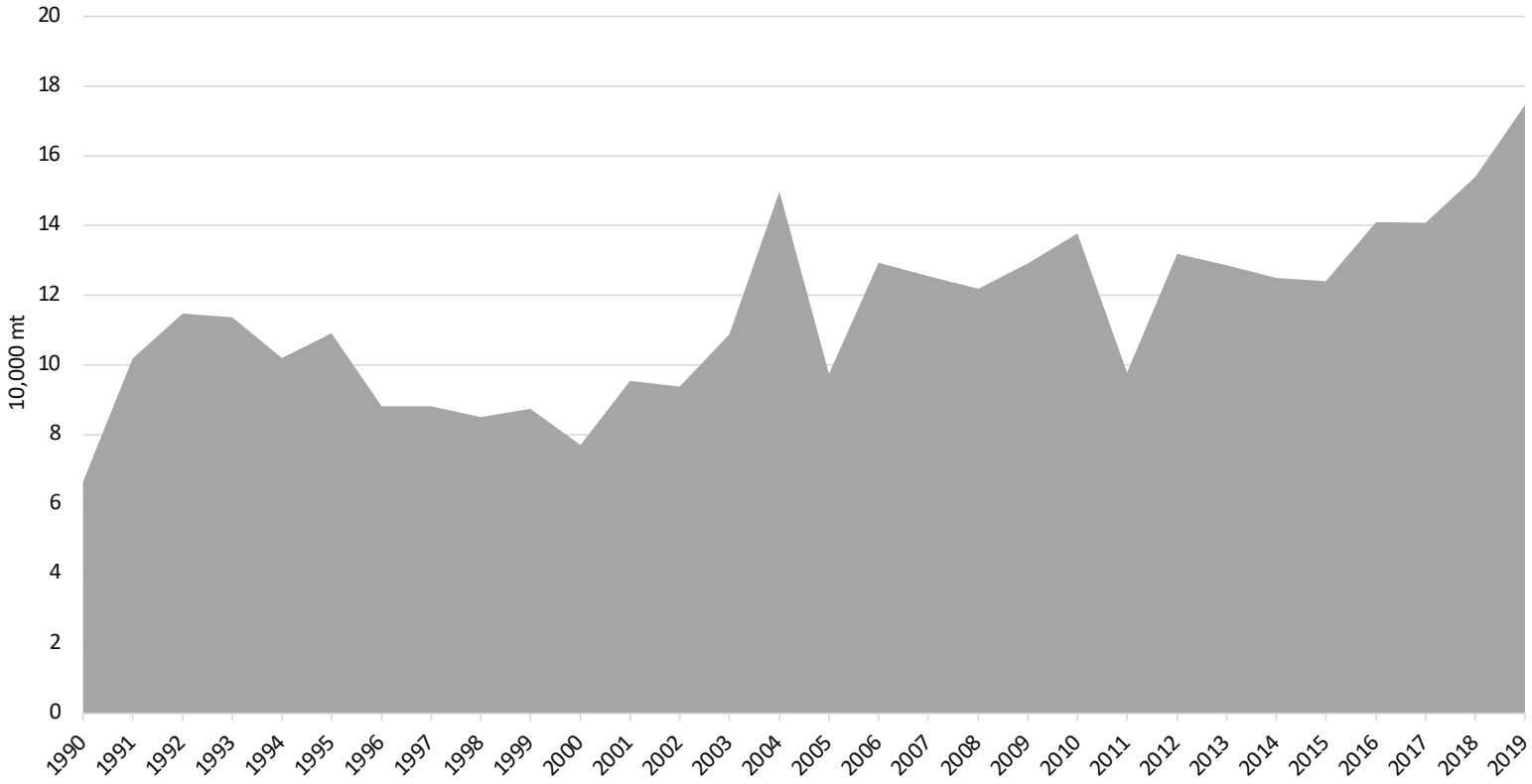
INTRODUCTION

- Seafood in general is a category where restaurants are important (Love et al., 2020), and oysters are one of the species where this is most strongly the case.

- Seafood prices in general vary with product attributes and characteristics, and there is strong indications that this is the case for oysters too as e.g. production location is advertised. However, data availability has been a barrier to conduct systematic research on this topic

- One available data source for an important market segment is restaurant menus, and that will be the main data source in tis study

U.S. FARMED OYSTER PRODUCTION



Source: FAO (2021)

OYSTER CONSUMPTION

- Trends in imports and consumption indicate U.S. is moving towards more raw, half shell, “premium” oyster products (Botta et al., 2020)
- Raw, half shell oysters are primarily consumed at restaurants
- Oysters can be transported live over significant distances, but the time they can be stored out of the water is not much more than a week
- Oysters have a wide variety of attributes that can have value and that vary regionally

IMPORTANCE OF OYSTER ATTRIBUTES

Consumers prefer specific attributes over others (Li et al., 2017)

- Smell
- Meat color
- Saltiness
- Location of harvest

Gulf consumers perceive the quality and safety of oysters from Apalachicola Bay and coastal Louisiana higher than those from other water bodies (Petrolia et al., 2017)

Non-gulf consumers perceive the opposite; however, Apalachicola Bay and coastal Louisiana rate higher than other Gulf areas (Petrolia et al., 2017)

Frequent consumers of oysters prefer farmed raised oysters (Kecinski et al., 2017)

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RESTAURANT MENUS AS A TOOL

SNACKS

Snack Trio 7
spiced almonds castelvetrano olives popcorn

French Onion Dip house potato chips 8

Deviled Eggs chive butter paprika panko 8

Gougères with Comté cheese 6

OYSTERS EAST OR WEST OR GULF *please inquire* 3/EA

Bouligny Tavern, New Orleans

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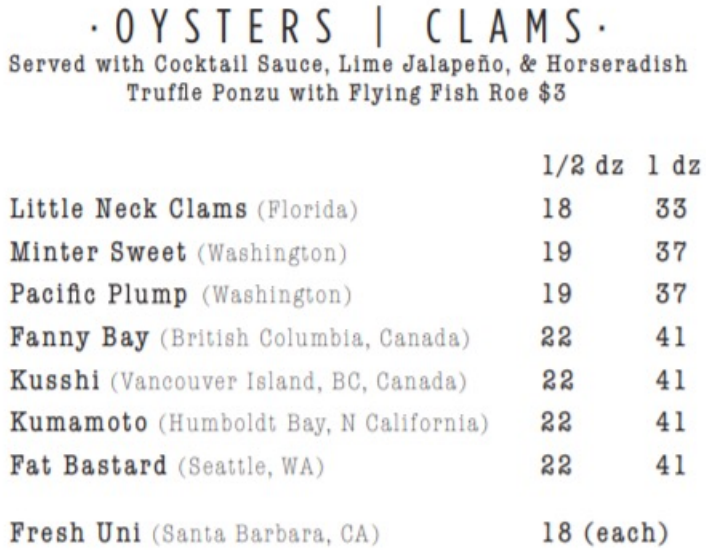

· OYSTERS | CLAMS ·

Served with Cocktail Sauce, Lime Jalapeño, & Horseradish
Truffle Ponzu with Flying Fish Roe $3

	1/2 dz	1 dz
Little Neck Clams (Florida)	18	33
Minter Sweet (Washington)	19	37
Pacific Plump (Washington)	19	37
Fanny Bay (British Columbia, Canada)	22	41
Kusshi (Vancouver Island, BC, Canada)	22	41
Kumamoto (Humboldt Bay, N California)	22	41
Fat Bastard (Seattle, WA)	22	41
Fresh Uni (Santa Barbara, CA)	18 (each)	

EMC Seafood & Bar, Los Angeles

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RESTAURANT MENUS AS A TOOL

Trip Advisor Database

- Searches including “oyster” products
- Only used menus that sold ***raw oysters***
- 20 cities, random draws in each city

Collected data included:

- Number of east coast oysters offered
- Number of west coast oysters offered
- Number of gulf coast oysters offered
- Average price level of restaurant
- Trip Advisor Rating
- Number of oyster menu items

Attributes:

- Brand name
- Grow-out location
- Other attributes
  - Grow-out method
  - Oyster species
  - Oyster taste
  - Oyster size

AVERAGE PRICES BY RESTAURANT REGION

Pacific
- $3.61

Midwest
- $3.47

Northeast
- $3.34

South
- $2.92

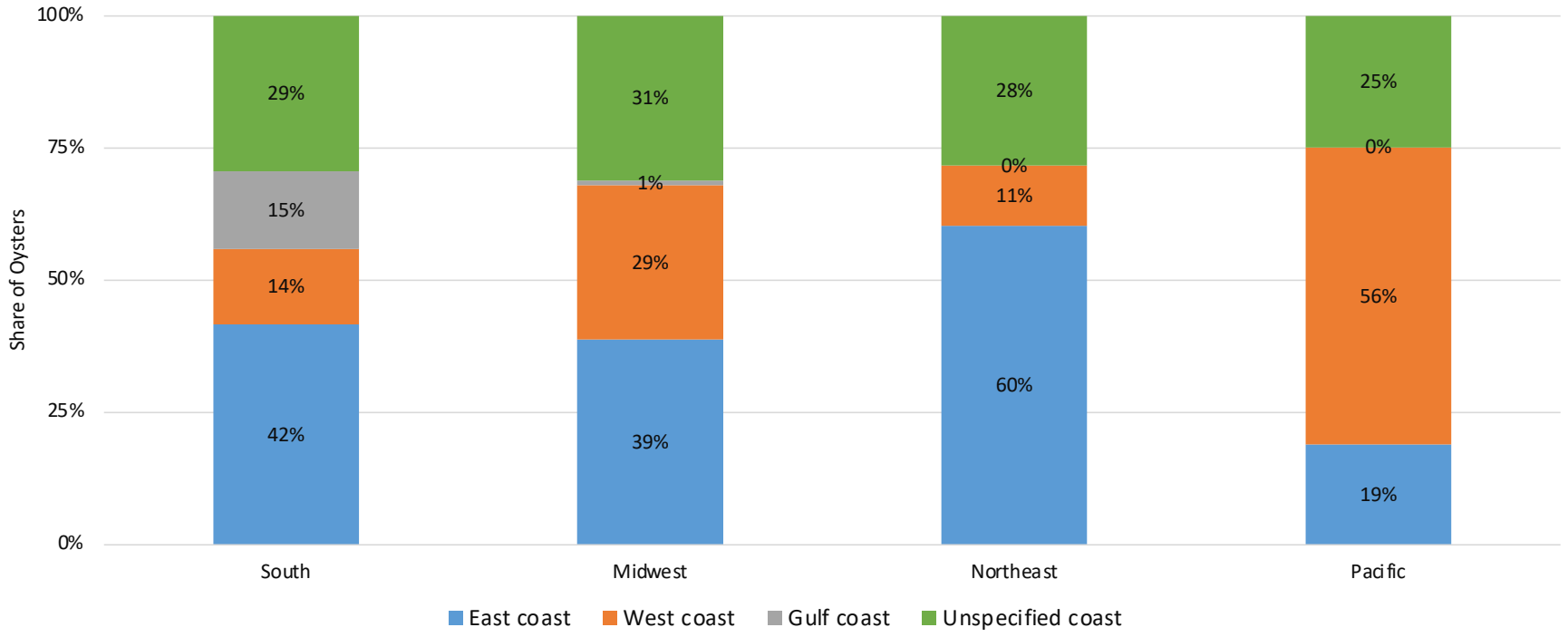
AVERAGE PRICES BY SOURCE REGION

Gulf Coast
- $2.69

East Coast
- $3.34

West Coast
- $3.71

SHARE OF OYSTERS SOLD BY SOURCE REGION



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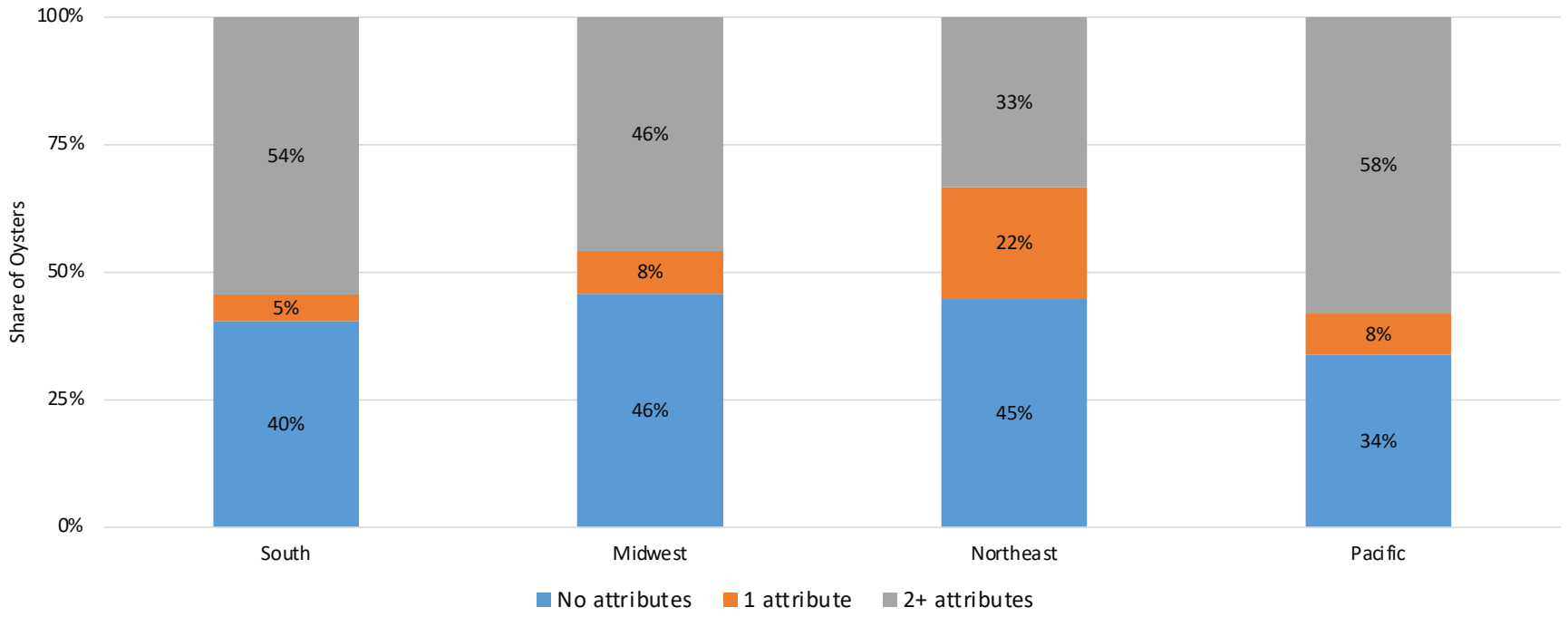
SHARE OF OYSTERS SOLD BY NUMBER OF ATTRIBUTES



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AVERAGE PRICES BY ATTRIBUTES

0 attributes
- $3.03

1 attribute
- $3.10

2+ attributes
- $3.45

Hedonic price models allow us to investigate the impact of different product attributes at the same time

These models indicate that the price of a product is a function of its attributes

Standard hedonic price model with thee groups of attributes (e.g. Production region, consumption region and brand:

$$\ln P_{it} = a + \sum_{j=2}^{J} b_j s_j + \sum_{k=2}^{K} c_k s_k + \sum_{l=2}^{L} d_l s_l + e_{it}$$

The price variable is normally in logs to that the parameters are interpreted as a percentage premium

Most rhs variables are dummies that takes the value one if an attribute is present

HEDONIC PRICE MODELS: MAIN RESULTS

(IN ADDITION TO WHAT WAS SHOWN BY THE DESCRIPTIVE STATISTICS)

- The price premium disappears locally
  - i.e., West coast oysters sold in Seattle receive the Pacific premium, but not any additional premium for being from the West coast

- Brand is the only attribute that provides value

- There is a premium for 2 or more attributes implying that with the exception of brand, almost any information will do

CONCLUDING REMARKS

- Prices of oysters vary systematically between U.S. producer regions, with Gulf producers fetching the lowest price
- Prices of oysters also vary systematically by where they are sold, but with significant discounts for oysters consumed in the region where they are produced
- Product attributes are important, but it is with the exception of brand the number of attributes not the specific attributes that are most important
- This creates opportunities, but based on what is available on the sampled menus, this is opportunities that Pacific and East coast producers utilize better than Gulf producers

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