

Convergent validity of stated
preference methods to estimate
benefits of seafood traceability:
The case of Gulf of Mexico oysters

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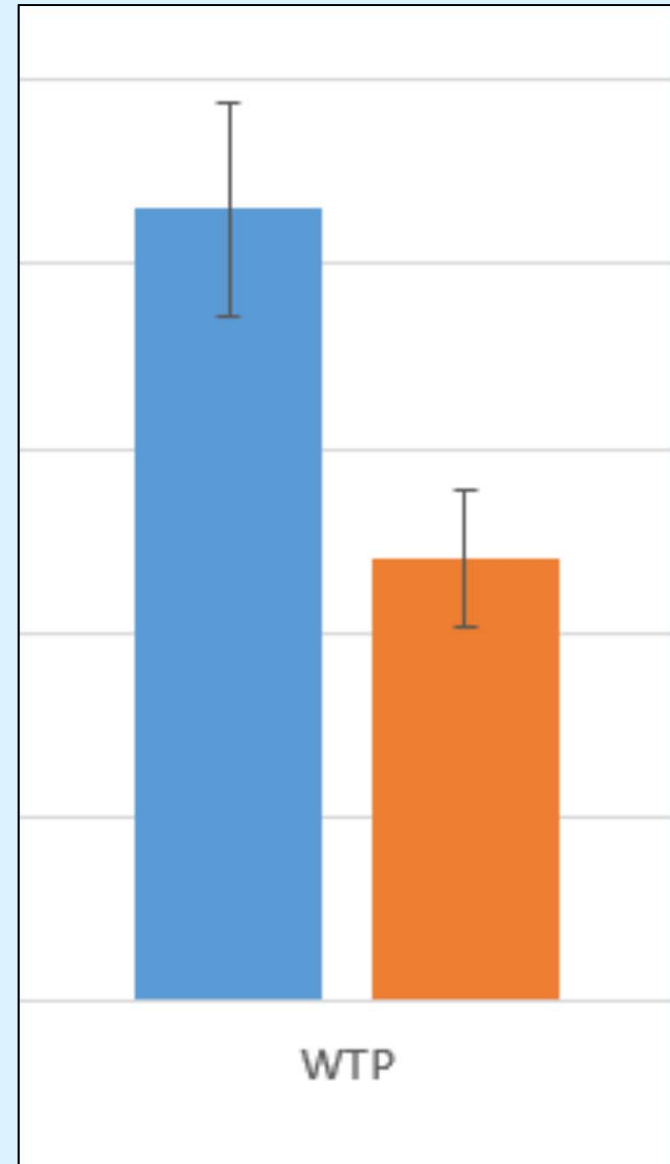
Background

- Gulf of Mexico oyster safety is a significant health issue
 - *Vibrio vulnificus* is the fourth leading cause of foodborne death in the United States.
- Seafood traceability is the ability to follow food through all stages of production, processing and distribution.



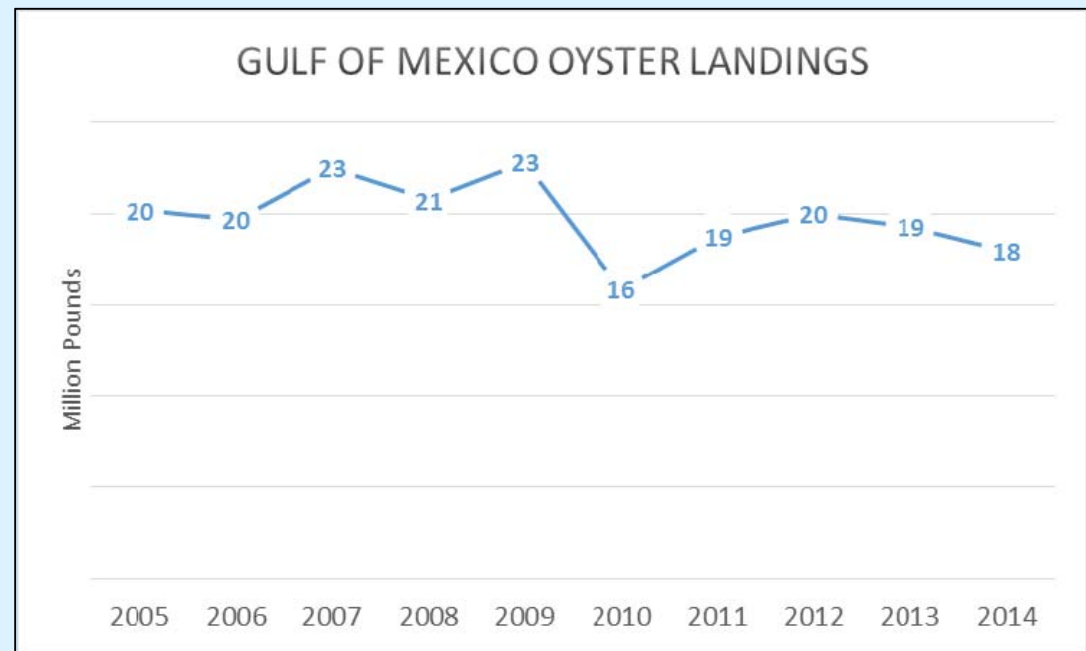
Convergent Validity

- We compare WTP for an oyster traceability program estimated with the CVM and CBM data under a common scenario
- No study that we are aware of has conducted a convergent validity test with seafood safety stated preference data



The Survey

- Online Survey Solutions - Research Now Panel
- Gulf states FL, AL, MS, LA, TX plus GA and CA
- NOV–DEC 2010
- n = 633 oyster consumers



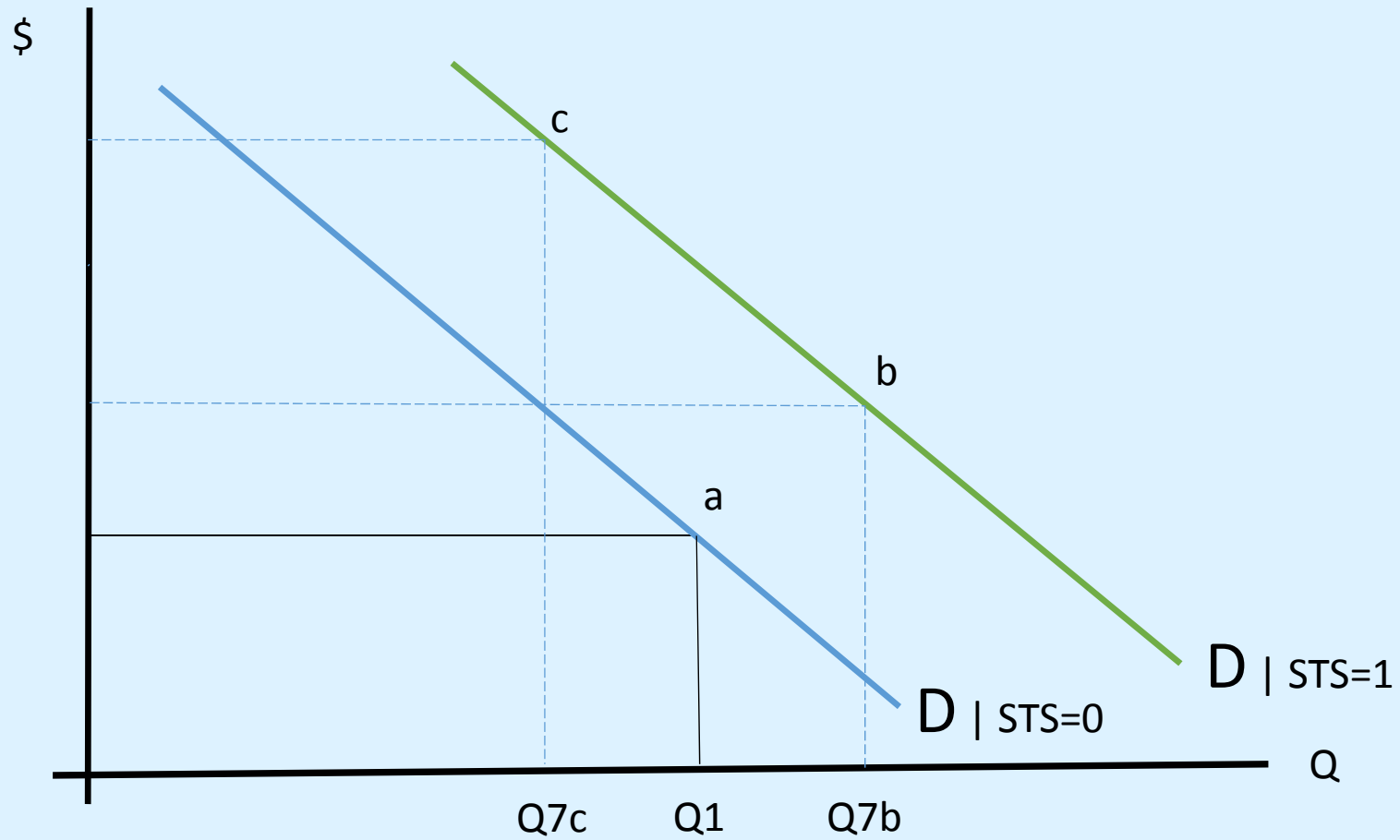
Q1: SP oyster meals

- Please think about the number of oyster meals you expect to eat over the next 12 months starting from today.
- Starting with the [Q|RP] oyster meals you told us that you typically eat in a year, if the average price of your oyster meals stays the same do you think you will eat more, less, or the same number of oyster meals over the next year?
- About how many more/less oyster meals do you expect to eat over the next year?

Q7: SP oyster meals with STS and ΔP

- If the Louisiana ban on oyster harvesting from all affected areas is lifted right now and a seafood traceability system is in place ...
- However, ... the program will result in an increase in the price of an average oyster meal for all consumers.
- Suppose that the price of your portion of your average oyster meal goes up by $[\Delta P]$ but the prices of all other food products stay the same, compared to the [Q6] oyster meals you previously told us you expect to eat next year, do you think you will eat more, less, or about the same number of oyster meals next year?
- About how many more/less would you eat?

Theory



CBM Data Summary

Scenario	Oyster Meals
Q1: Baseline	14.85
Q2: $\Delta P > 0$	12.75
Q3: $\Delta P < 0$	16.93
Q4: Ban	15.01
Q5: Ban & STS	15.30
Q6: STS	15.40
Q7: STS & $\Delta P > 0$	13.71

Fixed Effects Poisson Demand

Variable	Coefficient
ΔP	-0.037*
Ban	-0.0016
Traceability	0.033*

Referendum Vote

- Suppose that the seafood traceability system is put to a national referendum. ...
- If you could vote today and you knew that the price of your average oyster meal would go up by $[\Delta P]$ but the price of all other food would stay the same, would you vote for or against the proposed law?
 - For
 - Against
 - Undecided
- How sure are you about your choice to vote for the proposed law?
 - Not sure at all
 - Not very sure
 - Somewhat sure
 - Very sure

Referendum Vote Results

... would you vote for or against the proposed law?

		How sure are you ...?	
For	280	Not sure at all	2
		Not very sure	14
		Somewhat sure	117
		Very sure	147
Against	180		
Undecided	173		

CVM Data Summary

ΔP	%For (all)	%For (sws)	%For (vs)
1	58	56	34
3	42	37	22
5	36	34	16
7	39	38	18
Total	44	42	23
χ^2 (df=3)	19.62	20.29	19.00

Probit Referendum Vote Models

Variable	For (all)	For (sws)	For (vs)
Constant	0.16*	0.09	-0.42*
$\ln(\Delta P)$	-0.27*	-0.27*	-0.30*

Willingness to pay per meal

	ΔCS	WTP	95% CI	
CBM	0.89		0.47	1.31
CVM (all)		1.79	0.96	2.60
CVM (sws)		1.38	0.65	2.10
CVM (vs)		0.24	-0.29	0.51

Policy

- 18 million pounds landings in 2014
- 7.5 million annual Gulf of Mexico oyster meals
- WTP meal = \$1.12
[\$0.89, \$1.38]
- Benefits = \$8.37m
[\$6.65m, \$10.31m]



GSMFC Publication Number 222

Digital Traceability *for* Oyster Supply Chains: Implementation and Results of a Pilot

By

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Conclusions

- Convergent validity is achieved between contingent behavior and contingent valuation methods
 - Increases confidence in both methods
 - Estimated benefits of traceability seem low but should be compared to costs to determine efficiency of program
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Thanks!

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