

EFFECTS OF HIGHER FUEL AND LOWER DOCKSIDE PRICES ON GULF SHRIMPING

ABSTRACT

Dr. Posadas used the NOAA Fisheries' catch and costs estimates of Gulf shrimping operations in federal waters in 2019. The simulations cover changes in diesel fuel prices and dockside shrimp prices in the Gulf of Mexico. Simulation results show that Gulf shrimpers suffered heavy losses at fuel prices higher than \$3 per gallon. Shrimpers prefer to sell their shrimp catch at higher than \$4 per pound of headless shrimp to have a positive net income

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Many shrimp trawlers are docked at the Biloxi Small Craft Harbor this week. The dockside values of shrimp landings barely cover operating costs, primarily fuel.

LET US START OUR MODELING EFFORT!

- ❖ We will simulate what happens to the shrimpers' average net income at higher fuel prices and lower dockside prices.
- ❖ The average net income per pound is the difference between gross revenues less operating and fixed costs.
- ❖ Catch and costs are compiled from NOAA Fisheries' estimates in 2019.

WHERE DO WE GET OUR DATA ON PRICES?

- ❖ The average Gulf of Mexico dockside shrimp prices were imputed from total dockside values, and total pounds of headless shrimp landed.
- ❖ The pounds landed, and dockside values were compiled from the NOAA Fisheries website.
- ❖ U.S. no. 2 diesel retail prices (dollars per gallon) were compiled from the U.S. Energy Information Administration website.

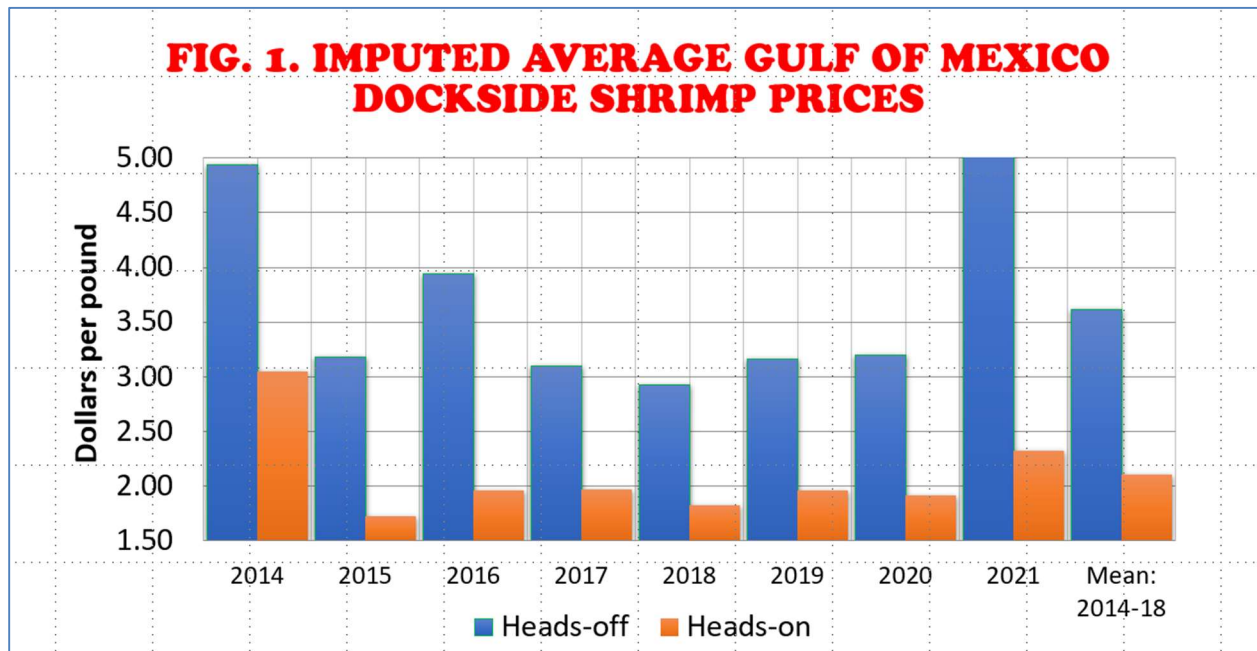
- ❖ Detailed trends in dockside prices of Gulf shrimp are shown in Posadas (2022b).

NOAA FISHERIES' TOTAL COSTS FOR THE 2019 GULF SHRIMPING OPERATIONS

- ❖ Fuel, Other supplies, Hired crew, and captain.
- ❖ Regular maintenance of vessel and gear, Major repair and haul out, Insurance, Overhead, Interest payments on vessel loans, Owners' vessel time, and Depreciation.
- ❖ Income taxes are not included.

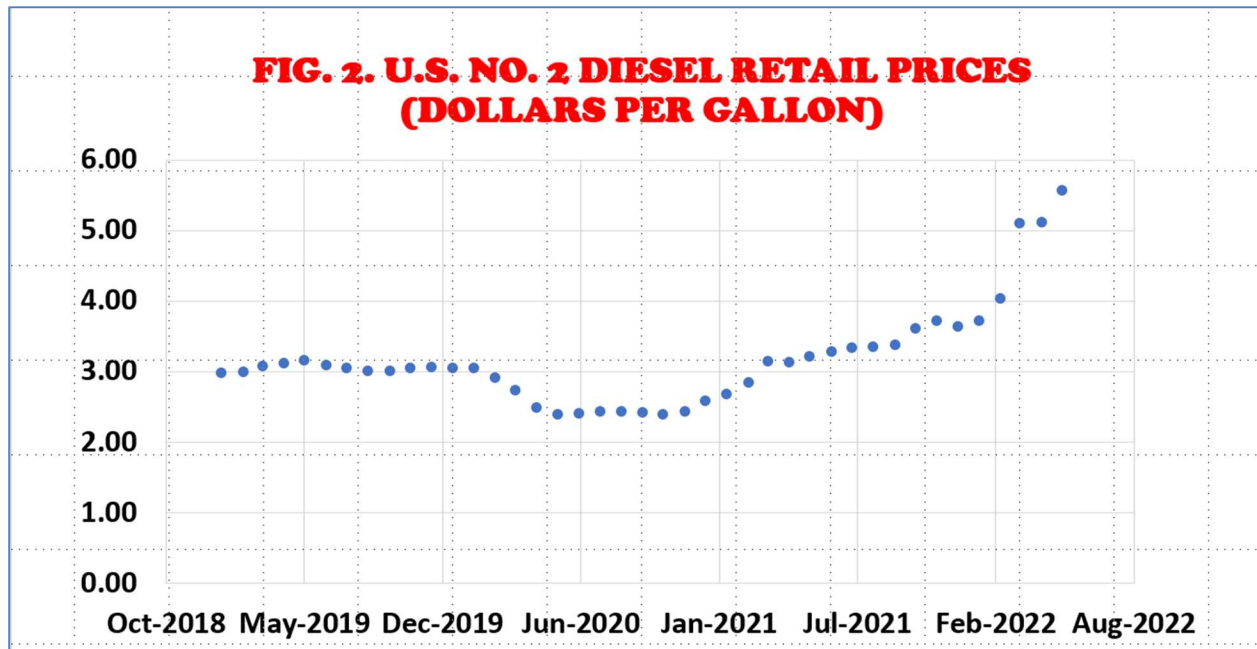
IMPUTED AVERAGE GULF OF MEXICO DOCKSIDE SHRIMP PRICES

- ❖ The imputed dockside shrimp prices in the Gulf of Mexico averaged about \$3.50 per pound of headless shrimp from 2014 to 2021 (Fig.1).
- ❖ We will use dockside prices from \$2 to \$5 per pound of headless shrimp for our simulations.



U.S. NO. 2 DIESEL RETAIL PRICES

- ❖ The diesel prices in the U.S. averaged about \$3.18 per gallon from January 2019 to May 2022 (Fig. 2).
- ❖ Since March 2022, it started rising above \$4 per gallon.
- ❖ We will use diesel prices from \$2 to \$5 per gallon for our simulations.

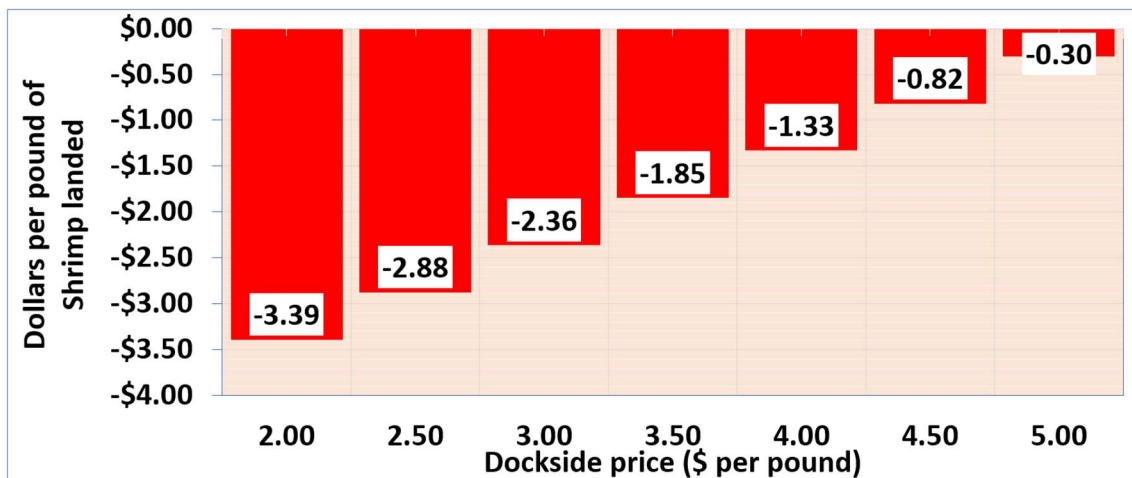


EFFECTS ON AVERAGE NET INCOME AT \$5 PER GAL OF DIESEL FUEL

- ❖ Fig. 3 shows the simulation results with the assumptions of \$5 per gallon diesel and shrimp dockside prices from \$2 to \$5 per pound.
- ❖ The average net income was negative at average shrimp dockside prices from \$2 to \$5 per pound.
- ❖ The Gulf shrimpers are not making any profits when fuel prices are \$5 per gallon or higher.
- ❖ The next slide shows the simulation results with the assumptions of \$5 per gallon diesel and shrimp dockside prices from \$2 to \$5 per pound.

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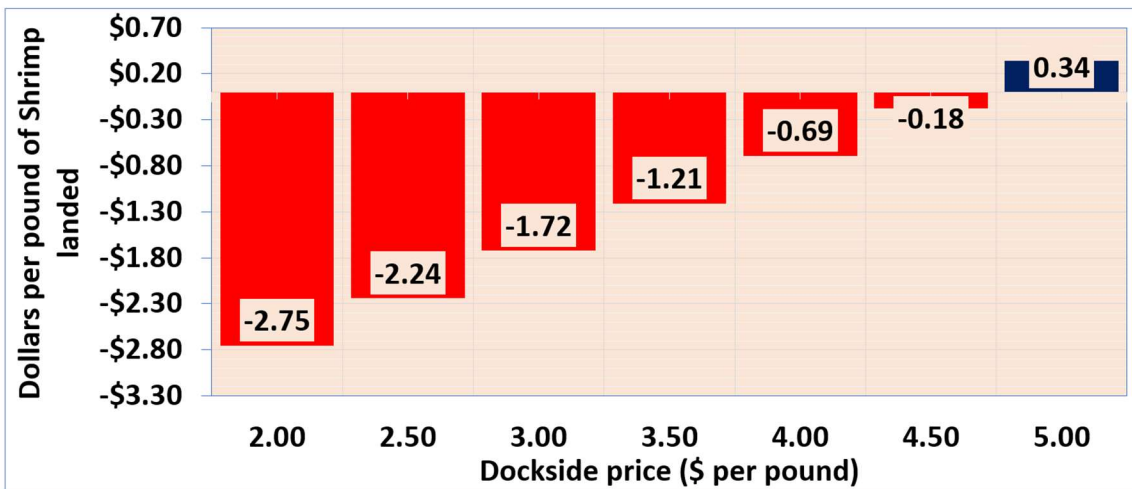
FIG. 3. EFFECTS ON AVERAGE NET INCOME AT \$5 PER GAL OF DIESEL FUEL



WHAT HAPPENS TO THE AVERAGE NET INCOME AT \$4 PER GAL OF DIESEL FUEL?

- ❖ Fig. 4 shows the simulation results with the assumptions of \$4 per gallon diesel and shrimp dockside prices from \$2 to \$5 per pound.
- ❖ The average net income was negative at average shrimp dockside prices of less than \$5 per pound.
- ❖ The Gulf shrimpers are not making any profits when fuel prices are \$4 per gallon or higher, and dockside prices are below \$5 per pound.
- ❖ However, imputed average headless shrimp dockside prices were about \$4 per pound during the past three years.

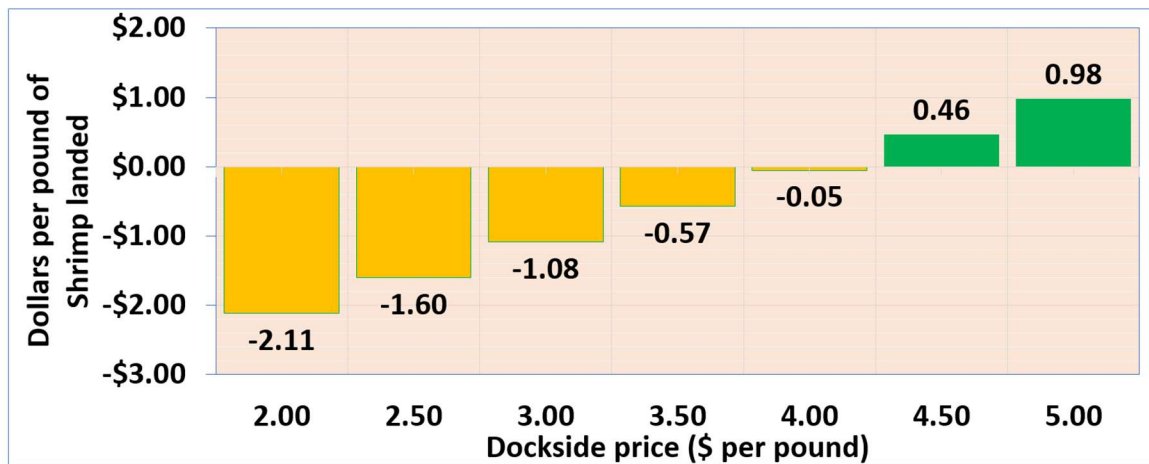
FIG. 4. EFFECTS ON AVERAGE NET INCOME AT \$4 PER GAL OF DIESEL FUEL



WHAT HAPPENS TO THE AVERAGE NET INCOME AT \$3 PER GAL OF DIESEL FUEL?

- ❖ Fig. 5 shows the simulation results with the assumptions of \$3 per gallon diesel and shrimp dockside prices from \$2 to \$5 per pound.
- ❖ The average net income was negative at average shrimp dockside prices of less than \$4 per pound.
- ❖ The Gulf shrimpers are not making any profits when fuel prices are \$3 per gallon or higher, and dockside prices are below \$4 per pound.
- ❖ The imputed shrimp dockside prices averaged about \$4.06 per pound during the past three years.

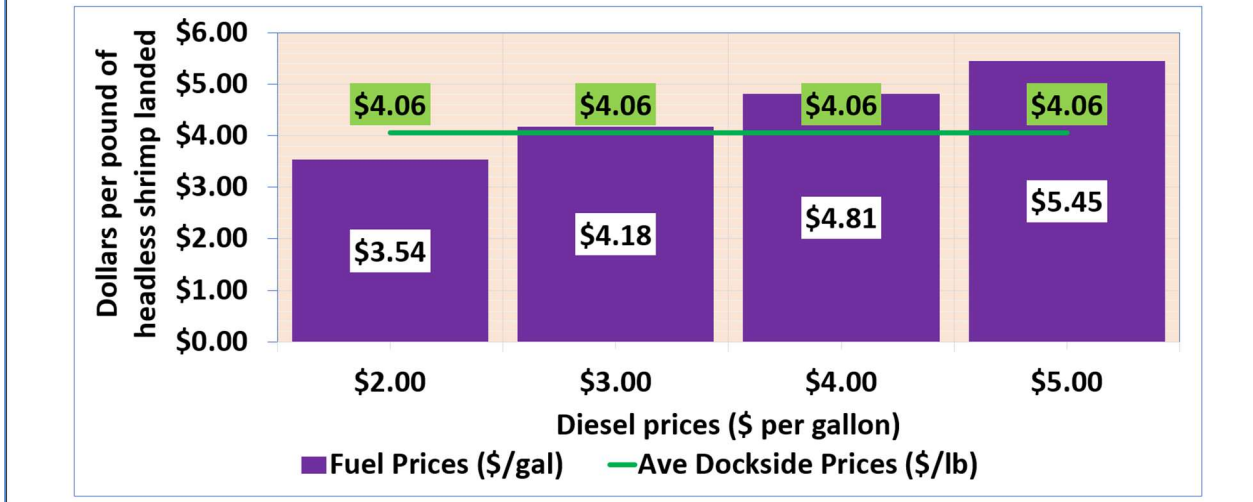
FIG. 5. EFFECTS ON AVERAGE NET INCOME AT \$3 PER GAL OF DIESEL FUEL



ARE GULF SHRIMPERS MAKING ANY PROFITS?

- ❖ The break-even point is that dockside price and fuel cost when shrimpers cover all operating or variable and fixed costs of shrimping.
- ❖ Fig. 6 shows that Gulf shrimpers can cover all their costs at fuel costs of \$3 per gallon of diesel or lower.
- ❖ Gulf shrimpers do not cover all costs at fuel costs above \$3 per gallon.

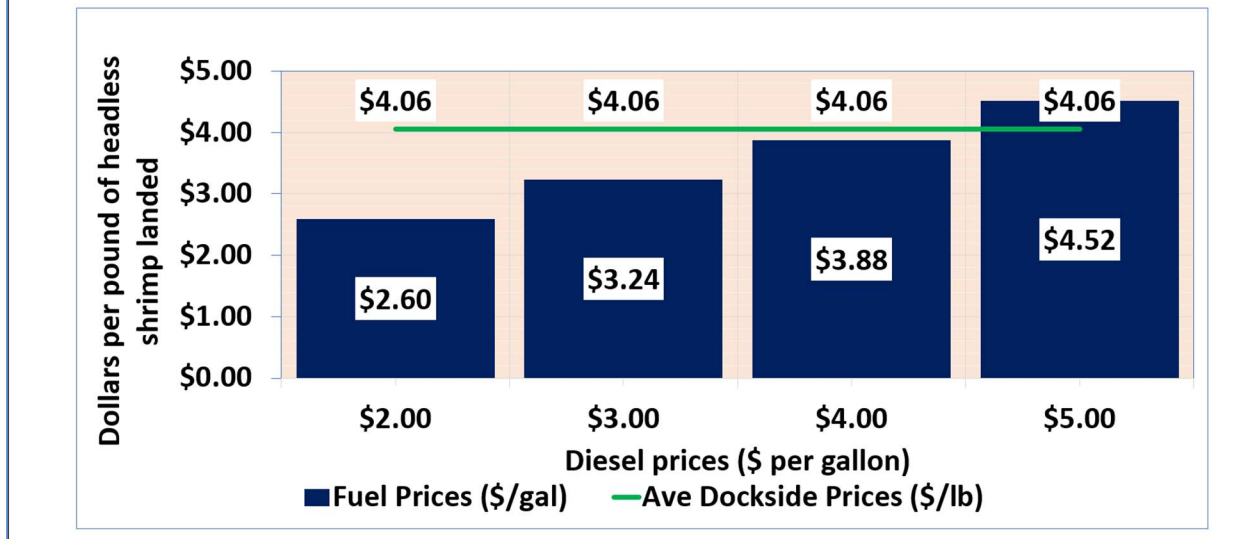
FIG. 6. BREAK-EVEN POINTS OF GULF SHRIMPING



ARE GULF SHRIMPERS BETTER OFF DOCKING AT THE HARBORS?

- ❖ The shut-down point is dockside price and fuel cost when shrimpers cover operating or variable costs of shrimping.
- ❖ Fig. 7 shows that Gulf shrimpers can cover their operating expenses and some of their fixed costs at fuel costs of \$4 per gallon of diesel or lower.
- ❖ Gulf shrimpers do not cover their operating costs at fuel costs above \$4 per gallon.

FIG. 7. SHUT-DOWN POINTS OF GULF SHRIMPING



SUMMARY

- ❖ These economic analyses are based on the 2019 catch and cost estimates of Gulf shrimping operations in federal waters prepared by NOAA Fisheries.
- ❖ The simulations cover changes in diesel fuel prices and shrimp dockside prices in the Gulf of Mexico in recent years.
- ❖ Simulation results show that Gulf shrimpers suffered heavy losses at fuel prices higher than \$3 per gallon.
- ❖ For a positive net income, Gulf shrimpers prefer to sell their shrimp catch at higher than \$4 per pound of headless shrimp.
- ❖ Under these economic conditions, many trawlers are docked in harbors instead of shrimping in the Gulf of Mexico.

MY SHRIMP ECONOMICS OUTREACH-1

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