

**AN ANALYSIS OF THE WORLD SHRIMP MARKET AND THE IMPACT OF  
AN INCREASING IMPORT BASE ON THE GULF OF MEXICO DOCKSIDE  
PRICE**

A Thesis

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## ABSTRACT

As a result of increased cultured activities, the world shrimp market has been expanded significantly during the past two decades. Because the growth in world supply has exceeded that of growth in demand, the deflated world shrimp price has fallen significantly since the mid-1980s. While a large producer of shrimp (primarily in the Gulf of Mexico), the United States is also the world's largest importer. In general, the Gulf of Mexico dockside price is determined by the world export price and, as such, the Gulf of Mexico price has fallen sharply in recent years. This study quantifies the impact on the U.S. Gulf of Mexico dockside shrimp price associated with increased cultured shrimp activities and concomitant increased exports to the U.S. market.

For purposes of analysis, a set of import demand and export supply equations were estimated. Specifically, import demand equations were estimated for three countries (regions) that account for the majority of shrimp imports – the United States, Japan, and the European Union. Similarly, export supply equations, were developed for the three primary warm-water shrimp producing regions – Asia, South America, and Central America. Finally, an inverse demand equation associated with U.S. Gulf of Mexico shrimp production was estimated.

Results suggest that the increased cultured production from the three regions has had a significant impact on the Gulf of Mexico dockside price. For example, results indicate that the Gulf of Mexico dockside price is expected to decline by approximately 3.5% for every 10% increase in Asian production of cultured shrimp. Similarly, analysis suggests that the estimated decline in dockside price associated with a 10% increase in South American cultured shrimp production is 2.2%. While an increase in Central

American cultured shrimp production was also found to significantly reduce the dockside price, increases in captured shrimp production were found to have a greater impact.

# CHAPTER I

## INTRODUCTION

World shrimp exports, valued at around \$12 billion, constitute nearly 17% of the \$71 billion global seafood export market, in 2004 (FAO). The export market has expanded significantly since the early-to-mid 1980s and this expansion is primarily attributed to increased production. This increased production, in turn, is the result of an increase in the cultured production of shrimp; particularly in Asia and South America. As a result of this increased production, the traded volume increased from approximately 900 million pounds (product weight) in 1980 to nearly 4.6 billion pounds in 2004 and the export price, expressed in real terms (1982-84 U.S. CPI equal to the base), declined from \$3.22 per product-weight pound in 1980 to \$1.38 per pound in 2004.

The U.S. produces approximately 200 million pounds (headless shell-on weight) of shrimp annually. Most of this production occurs in the South Atlantic and Gulf regions of the United States which include the coastal states extending from North Carolina through Texas. In general, the capture shrimp fisheries throughout the United States are believed to be fully capitalized and annual variations in production can be attributed primarily to changes in environmental conditions that alter populations rather than changes in effort.

While a major producer of shrimp, the U.S is also the world's largest importer of shrimp. As world production of shrimp has expanded, export of this product to the United States has increased significantly. In 1985, for example, U.S. shrimp production equaled 207 million pounds (headless shell-on weight) while exports to the U.S. market totaled 452 million pounds (headless shell-on equivalent weight) (U.S. Dept. of



























































































































































