

*Marine Resource Economics*, Volume 23, pp. 459–483  
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0738-1360/00 \$3.00 + .00  
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## The Southeast U.S.A. Shrimp Industry: Issues Related to Trade and Antidumping Duties

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**Abstract** *On December 31, 2003 a coalition representing Southeast U.S.A. shrimp harvesters and processors filed a petition with the U.S. International Trade Administration and the U.S. International Trade Commission seeking relief in the form of antidumping duties from what the coalition perceived as unfair trade practices by six countries—China, Vietnam, India, Thailand, Ecuador, and Brazil. After an exhaustive investigation, an affirmative finding of dumping and injury was found, and duties were imposed on subject merchandise from these six countries. This study examines the factors that led to the petition being filed, the investigation process, and the outcome associated with the imposition of antidumping duties. Overall, the study concludes that while the duties resulted in a limited amount of trade deflection, particularly among those countries assessed with higher duties, much of the protective effect that might have been forthcoming from restricting imports from the six named countries was eroded by trade diversion to countries not included in the petition.*

**Key words** Antidumping duties, shrimp, trade, United States of America.

JEL Classification Codes F13, Q17.

### Introduction

World exports of shrimp, valued at \$10.9 billion, constituted more than 15% of the 2003 \$63 billion international trade market in fisheries commodities (FAO 2007). Trade in shrimp has expanded significantly since the early 1980s in response to both an increase in world production of the commodity, especially cultured activities, and to favorable economic conditions. As world exports of fresh and frozen shrimp expanded from 897 million pounds in 1980 to 4.1 billion pounds in 2003, the deflated price of the exported product fell from \$3.22 per product-weight pound to \$1.47 per pound (derived from FAO 2007).<sup>1</sup>

The United States of America, while a major producer of shrimp, is also the world's largest importer. In conjunction with the increasing import base and decline in world market price, the price paid to U.S. shrimp fishermen (*i.e.*, the real dockside price) has gradually been declining since the early 1980s. The Southeast U.S.A. (the coastal states extending from North Carolina through Texas) harvesting

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<sup>1</sup> Unless otherwise noted, all values and prices throughout this report have been adjusted for inflation using the U.S. Consumer Price Index. The base used for adjusting current dollars to real (deflated) dollars is 1982–84.

sector, unable to make the adjustments needed, has frequently requested relief from the perceived problems associated with the growing import base and the resulting suppression in dockside prices.

On December 31, 2003 a coalition of Southeast U.S.A. shrimp producers and processors filed a petition with the U.S. Department of Commerce (USDOC) and the U.S. International Trade Commission (USITC) alleging that six countries—China, Vietnam, India, Thailand, Ecuador, and Brazil—were unfairly ‘dumping’ product on the U.S. market. After a one-year investigation, a finding of dumping and injury to the domestic industry by means of dumping was affirmed. Antidumping duties, varying greatly by country, were established accordingly.

While other components of the U.S. seafood industry (*e.g.*, catfish, salmon, and crawfish), have, in the past, requested relief from the perceived problems associated with the growing import base and the resulting suppression in dockside prices, these requests were relatively limited in scope when compared to the request brought forth by the shrimp industry.<sup>2</sup> For example, previous U.S. seafood antidumping petitions targeted only one country, whereas the shrimp antidumping petition targeted six countries.<sup>3</sup> Similarly, while the number of different products included in previous petitions tended to be limited (*e.g.*, catfish fillets from Vietnam, crawfish tail meat from China), the number of products included in the U.S. shrimp antidumping petition, while not all inclusive, was large in scope. Finally, with respect to the three previous investigations—catfish, crawfish, and salmon—the number of countries producing a product that might compete in the U.S. market with the country being targeted in the investigation was limited. Though six countries were targeted in the shrimp antidumping petition, there are at least 20 other countries which produced sizeable amounts of warm-water shrimp at the time of the investigation, and much of the production from these countries entered the world trade market. Hence, product from these countries could, potentially, be diverted to the U.S. market if the trade flow to the U.S.A. among the six targeted countries was interrupted as a result of duties imposed on the six named countries.

The overall goals of this article are to examine those factors that culminated in the U.S. shrimp industry filing an antidumping petition on December 31, 2003 and the impacts associated with the subsequent imposition of duties on the six named countries. To achieve these goals, the article proceeds as follows. First, a brief review of relevant antidumping literature is presented. Then, the world shrimp supply, trade, and impacts of U.S. imports on the Southeast U.S.A. dockside shrimp price are briefly reviewed. Attention is then turned to a review of previous attempts to limit U.S. shrimp imports, the most recent attempt, and an analysis of why the outcome of the most recent investigation differed from outcomes of previous investigations. After reviewing some issues of relevance to the current antidumping investigation, the impacts associated with the investigation and subsequent imposition of duties on subject merchandise from the targeted countries is analyzed. The final section presents some concluding remarks.

## Review of Antidumping Literature

As indicated by Malhotra, Rus, and Kassam (2008), there is a relatively large body of literature examining the effectiveness of antidumping investigations on trading

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<sup>2</sup> A review of the two U.S. trade disputes involving salmon is presented by Asche (1997) and Asche, Bjørndal, and Sissener (2003).

<sup>3</sup> Technically, six separate petitions were filed with the USDOC and the USITC.

patterns for an importing country. Much of the literature focuses on two central themes. The first theme is whether antidumping measures result in a reduction in imports among the targeted countries (generally referred to as the 'named' countries). This issue is generally referred to as trade 'deflection.' The second theme is whether decreases in supply among named countries are partially or totally offset by increases in supply by non-named countries (generally referred to as trade diversion).

In addition to these two themes, two other issues have been receiving increased attention. The first issue is whether the initiation of an antidumping investigation can have an impact on imports, even prior to when a decision is made. This issue is generally referred to as the 'harassment effect.' The second issue relates to whether affirmative dumping findings are 'tied' to macroeconomic conditions in the country seeking relief and whether the filings of antidumping petitions are purposely timed to better ensure an affirmative finding and higher duties.

In general, most studies analyzing the issue of trade deflection have found substantial declines in the volume of trade from those countries named in the petition with 'high' duties being particularly effective (*e.g.*, Staiger and Wolak 1994; Prusa 1997, 2001; Malhotra, Rus, and Kassam 2008). For example, Malhotra, Rus, and Kassam, whose analysis is limited to U.S. imports of agricultural commodities (and thus is likely to be most relevant to the shrimp antidumping petition), found "an extremely significant impact of antidumping duties on imports from countries named in the petition" and also found that the magnitude was quite high. Specifically, in the first year subsequent to an affirmative action being given and duties imposed, imports from named countries were found to decline by about 60%. Duties were also found to significantly restrict imports in the following years.

With respect to the issue of trade diversion, studies provide somewhat more 'mixed' results. As noted by Malhotra, Rus, and Kassam (2008), for example, Prusa (1997, 2001) found a significant amount of trade diversion toward non-named countries in association with petitions filed by the U.S. manufacturing sector.<sup>4</sup> Significant trade diversion suggests, of course, that protection afforded to the domestic industry via antidumping duties may be limited.<sup>5</sup> In an analysis of antidumping petitions filed by the U.S. agricultural sector, however, Malhotra, Rus, and Kassam (2008) found no significant trade diversion, suggesting that trade deflection resulting from an affirmative finding of dumping may have a longer lasting protective effect on the U.S. agriculture sector than any protective effect associated with affirmative findings related to manufacturing products.

As discussed by Prusa (2001), the harassment effect associated with antidumping investigations is the result of two factors. First, during the investigation period, temporary duties are levied on subject merchandise included in the scope of investigation.<sup>6</sup> Second, uncertainty related to the outcome of the investigation results in a stifling effect. Prusa (2001), for example, found a significant harassment effect, regardless of whether duties were subsequently levied. In their study of antidumping

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<sup>4</sup> As noted by Malhotra, Rus, and Kassam (2008), the studies by Prusa actually cover all products, but since 80% of all petitions filed in the U.S.A. are by the manufacturing sector, this sector drives the results.

<sup>5</sup> In his 1997 study, for example, Prusa found that increased imports from non-named countries offset any decrease in imports among named countries within a six-year period. In his 2001 study, Prusa found that for affirmative decisions, imports by non-named countries increased by 16% in the first year after the investigation and by 45% by the third year.

<sup>6</sup> If, during the period of investigation, named countries are found not to be increasing exports to the country in question as a means of circumventing any subsequent duties that would be levied on the product (assuming an affirmative finding), the duties collected during the period of investigation are returned.

duties in the U.S. agriculture sector, Malhotra, Rus, and Kassam observed no harassment effect.

The U.S. antidumping laws are administered by both the USDOC and the USITC. In the first stage, the USDOC determines the existence and the degree to which dumping is occurring (*i.e.*, “unfair” pricing). As noted by Prusa (2001), the finding by the USDOC of “unfair” pricing has been the norm since 1980, with a negative finding being reached in less than 5% of the cases being brought before the agency. While the finding of unfair pricing by the USDOC is the norm, the finding of material injury to the domestic industry by the USITC is less certain.<sup>7</sup> However, the finding of material injury has been clearly linked to the macroeconomic conditions of the domestic economy (see Knetter and Prusa 2003) and Feinberg (2005) has recently provided evidence that petitioners have, since the mid-1980s, become increasingly sophisticated in timing the petition to increase the probability of receiving a favorable outcome from the USITC.

## World Supply, Trade, and Impacts on Domestic Prices

### *World Shrimp Production*

Shrimp production, as with many other seafood commodities, is a combination of wild harvest and farming activities. Estimated total annual shrimp production (*i.e.*, captured and farmed product) throughout the world, as indicated in figure 1,<sup>8</sup> increased from 3.4 billion pounds (live weight) in 1980 to 13.4 billion pounds by 2005. Overall, the increase in world shrimp production during the 1980 through 2005 period translates into a growth rate of more than 400 million pounds per year. To place this annual growth rate into perspective, the annual Southeast U.S.A. shrimp harvest generally falls within the relatively narrow range of 220 million pounds to 280 million pounds (live weight).<sup>9</sup> Hence, annual growth in world production of warm-water shrimp has, in the long run, exceeded total Southeast U.S.A. production.

Much of the growth in world warm-water shrimp production since the 1980s has been the result of successful farming activities. World production of warm-water farmed shrimp in 1980 equaled 160 million pounds, which accounted for approximately 5% of total production at the time (figure 1). By 2005, farmed production had advanced to about 5.9 billion live-weight pounds, or almost 45% of total world warm-water shrimp output.

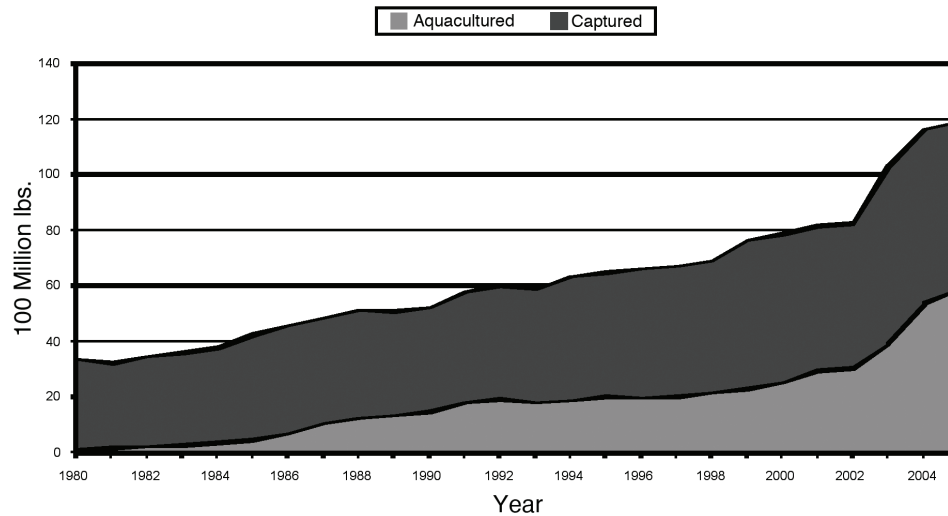
While an increase in the world culture production is evident throughout the period of study, growth has been particularly pronounced since the mid- to late-1990s. For example, cultured production in 1997 equaled 2.1 billion pounds (live weight). By 2003, it had more than doubled to 4.7 billion pounds and increased again to 5.9 billion pounds in 2005.

Asia, whose farmed shrimp production advanced from 135 million pounds (live

<sup>7</sup> For example, Prusa (2001) found that a finding of material injury was negative among approximately one-half of the cases brought before the USITC since 1980.

<sup>8</sup> All data on world shrimp production is derived from the FAO (2007) Fisheries Global Aquaculture Production and Global Capture Production databases. Production of *Akiimi Paste* is excluded from captured estimates since this product is low valued and generally does not enter the world trade market.

<sup>9</sup> The Southeast U.S.A. shrimp species are short lived, and the population in any given year is generally thought to be independent of the level of effort in previous years. Furthermore, variations in annual harvests are considered to be primarily related to changes in environmental conditions that affect stock size rather than changes in effort.



**Figure 1.** Annual World Shrimp Production (live weight), 1980–2005

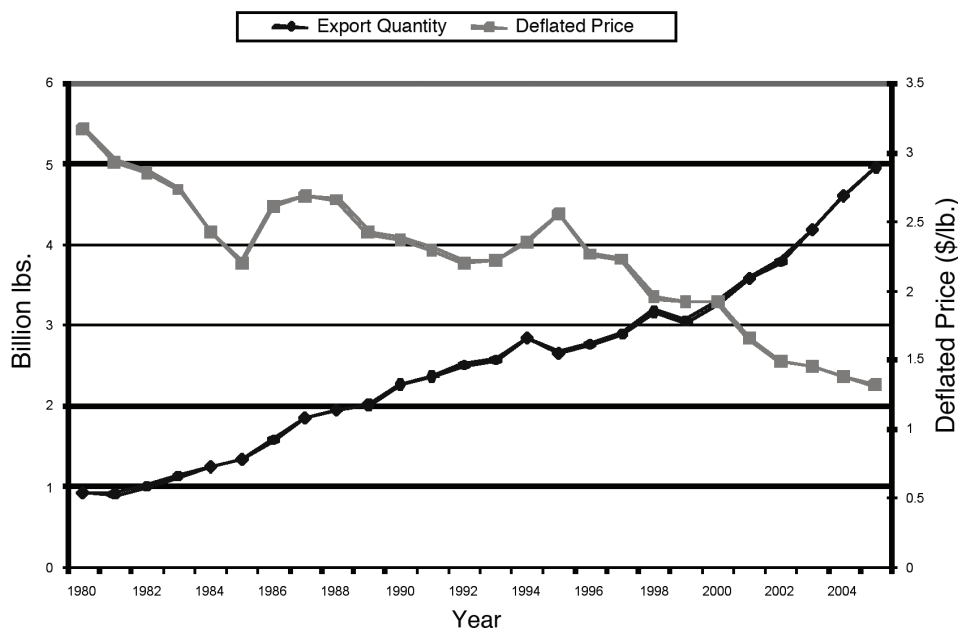
Source: FAO (2007).

weight) in 1980 to 5.3 billion pounds in 2005, has accounted for the vast majority of growth in aquaculture production and currently accounts for almost 90% of the total. Cultured production in South America, which increased from 22 million pounds in 1980 to 360 million pounds in 2005, represents about 7% of the world total. Finally, cultured production in Central America advanced from less than 1 million pounds in 1980 to 245 million pounds in 2005.

### *World Shrimp Exports*

World exports of shrimp, which equaled about 900 million pounds in 1980, more than quadrupled to 4.9 billion pounds by 2005 (figure 2). After adjusting for inflation, the value of world shrimp trade more than doubled from \$2.9 billion to \$6.5 billion during the period. The increase in deflated value is substantially less than the 430% increase in export quantity, suggesting a sharp decline in the real (*i.e.*, deflated) price of the exported product. Overall, the \$1.31 price of the exported product in 2005 reflects more than a 50% decline from the \$3.17 per pound price in 1980 (figure 2). As indicated, the real price of the exported product fell sharply during the early-1980s before stabilizing at approximately \$2.25–\$2.50 per pound during mid-1980s through 1997 period. Since 1997, however, prices have fallen sharply. This most recent period of declining export prices coincides with the period of significantly higher cultured shrimp production. Given the relatively high increases in world income since the mid-1990s, the recent decline in price tends to suggest that growth in shrimp supply has exceeded the growth in demand, resulting in a downward pressure on the real price.<sup>10</sup> This is common with other successful

<sup>10</sup> As discussed below, while world income has increased substantially since the mid-1990s, the primary importers of shrimp include the U.S.A. and Japan. Income growth in Japan since the mid-1990s has been very erratic and relatively low.



**Figure 2.** Annual World Shrimp Exports (product weight) and Deflated Export Price, 1980–2005

Source: FAO (2007).

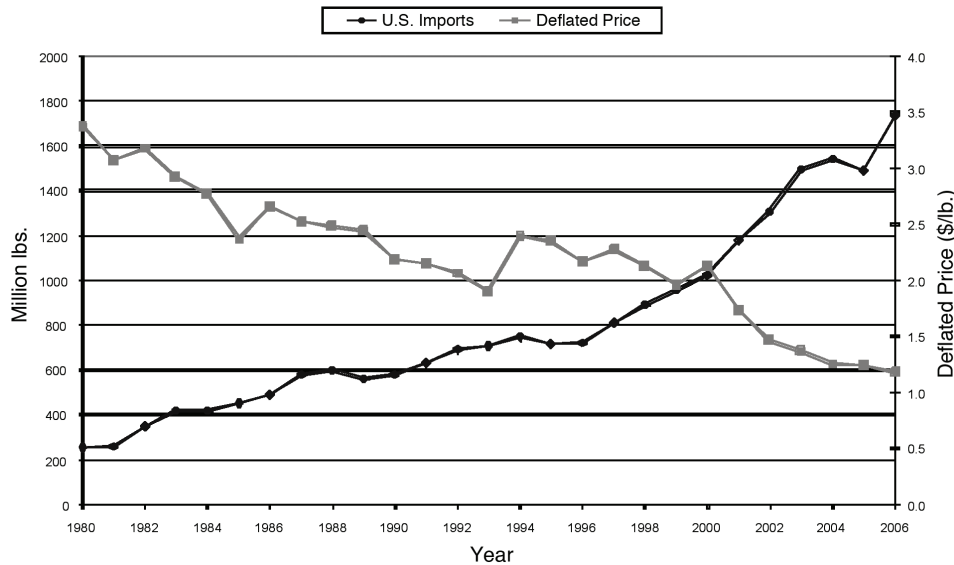
aquaculture species, as numerous studies have indicated that productivity growth seems to be the main driver for the increased production (*e.g.*, Asche 1997; Asche, Bjørndal, and Young 2001; Guttormsen 2002; Anderson 2002).

Increased shrimp harvest, both wild and cultured, has, of course, allowed for more product to enter the international trade market. However, it is important to recognize that the increasing trade flow reflects not just increased production in total, but also the source (*i.e.*, farmed production versus wild production) of the increased output. As noted by Csavas (1994), farm-raised shrimp is of greater importance than wild product in world trade. Reasons cited by the author include: (*i*) farm-raised product has greater ‘freshness’ than wild product; (*ii*) farmed product is less seasonal in nature and, hence, more reliable than the wild counterpart; (*iii*) species and sizes can be controlled better in the farm-based system than the wild-based system; and (*iv*) the current trends in vertical integration of the farming system lend themselves to better adaptation to consumer needs.

While the primary exporters of shrimp are many and have changed substantially over time, two countries, the U.S.A and Japan, have long dominated the import market. These two countries combined have historically accounted for upwards of 50% of the world shrimp imports by value. The European Union (E.U.) represents a significant portion of the remaining import market; particularly if limited to warm-water shrimp trade.

U.S. Imports: A Closer Look

Annual U.S. shrimp imports, expressed on a headless, shell-on equivalent weight basis, increased by a factor of five during the period of analysis ending in 2006, from about 260 million pounds to 1.7 billion pounds (figure 3).<sup>11</sup> During the early 1980s, Central America constituted the dominant seller of shrimp to the U.S. market, accounting for approximately one-half of total U.S. imports, while South America and Asia, with equal shares, accounted for most of the remaining imports. As Ecuador's cultured shrimp industry developed rapidly during the early- to mid-1980s, growth in U.S. imports largely reflected increased Ecuadorian product. As Asian cultured activities expanded rapidly after the mid-1980s, however, most of the growth in U.S. imports has reflected increased Asian production. By 1997, the Central American share of the total had fallen to about 25%, while the Asian share had increased to almost 50%. With the large growth in Asian cultured shrimp production since the mid-1990s, the Asian share increased to 70% by 2003 and approached 75% of the total in 2006. Similarly, with growth in South American culture activities, exports from South America to the U.S.A. increased from less than 50 million pounds in the early 1980s to 190 million pounds in 1997, with exports from Ecuador representing most of the expansion. All of the major Asian exporting countries produce significant amounts of cultured shrimp (*e.g.*, Thailand, Vietnam, India), and the largest South American exporter, Ecuador, is also a major cultured shrimp producer.<sup>12</sup> It



**Figure 3.** Annual U.S. Shrimp Imports (headless, shell-on equivalent weight) and Deflated Import Price, 1980–2006

Source: USDOC (various years).

<sup>11</sup> U.S. import data are derived from USDOC (various issues). Imports, expressed on a product weight basis, were converted to head-off equivalent weight based on the following conversions: breaded 0.63; shell-on 1.0; peeled raw 1.28; other 0.57.

is safe to say that the vast majority of the increasing U.S. import base since the mid-1980s constitutes cultured shrimp.

Given the relatively high proportion of shrimp exports destined for the U.S. market, one would anticipate a close relationship between the world export price and the U.S. import price. This is confirmed by a comparison of the relevant information in figure 2 (*i.e.*, the world export price) and figure 3 (*i.e.*, the U.S. import price). Since the U.S. import price is expressed on a headless, shell-on equivalent weight basis, whereas the world export price is expressed on a product weight basis, one would expect the former to be somewhat lower than the later. This is generally the case.

In addition to the increasing import base, the composition of imports has been changing. Specifically, value-added products, particularly peeled products, have been representing an increasing share of total imports. In 1980, for example, headless shell-on imports, equaling 139 million pounds, constituted 63% of total U.S. imports, expressed on a product-weight basis (figure 4).<sup>13</sup> Peeled product (raw and other), equaling 76 million pounds (product weight) and representing 35% of total imports by product weight, accounted for almost all of the remaining imports. Breaded imports represented the remaining 2%. While imports of headless, shell-on product increased throughout the period of analysis to 565 million pounds in 2006, its share fell to 42% of total imports (product weight). By comparison, the share of the total import base represented by peeled product (raw and other) increased to almost 50%. Breaded imports, which were negligible throughout the 1990s, accounted for 8% of total U.S. shrimp imports in 2006 by product weight.

In general, while there has been steady growth in peeled product during 1980–2006, the growth since the mid- to late-1990s can be described as ‘explosive.’ Specifically, U.S. imports of peeled shrimp advanced from 300 million pounds in 1997 to 540 million pounds in 2003 (product weight), or by almost 80%, before increasing another 80 million pounds to 623 million pounds in 2006. As discussed below, the changing import composition has significant ramifications with respect to processing activities being conducted in the Southeast U.S.A. and in the success of the anti-dumping petition filed at the end of 2003.

### *Impact on Domestic Price*

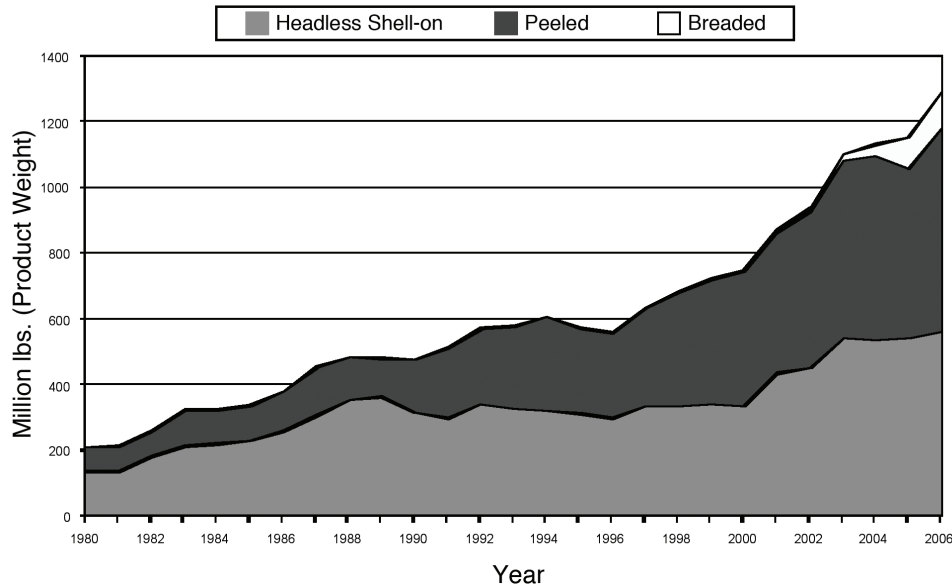
In general, the Southeast U.S.A. deflated dockside shrimp price, which closely mirrors the import price, can be segmented into three relatively well-defined time periods; the 1980s, the 1990s, and post 2000. During the early-1980s, the deflated dockside price initially advanced from about \$2.70 per pound in 1980–81 to \$3.40 per pound in 1982–83 (figure 5). With the initial increase of Ecuadorian cultured product entering the U.S. market, followed soon thereafter by Asian product, the deflated dockside price fell sharply and equaled only \$2.10 per pound in 1989. Despite continued increases in U.S. imports during the 1990s, the growth in U.S. demand resulted in a relatively stable deflated dockside price.

Equaling \$2.10 in 2000, the deflated dockside price then dropped precipitously with the 2003 price (\$1.26 per pound) equaling only 60% of that observed just four years earlier. This decline coincided with a period of rapidly increasing cultured

<sup>12</sup> U.S. shrimp imports are not recorded by type (*i.e.*, cultured versus wild). However, it is probably safe to assume that most U.S. imports from some countries, such as Thailand and Ecuador, are of a cultured nature, even though these countries also produce sizeable amounts of wild shrimp (see Csavas [1994] for details).

<sup>13</sup> Small amounts of canned product are not included in this figure and discussion.





**Figure 4.** Annual U.S. Shrimp Imports by Product Form, 1980–2006  
Source, USDOC (various years).

shrimp production and, for reasons outlined in greater detail below, exceedingly rapid growth in U.S. imports. Finally, the deflated dockside price has remained relatively stable since 2003.

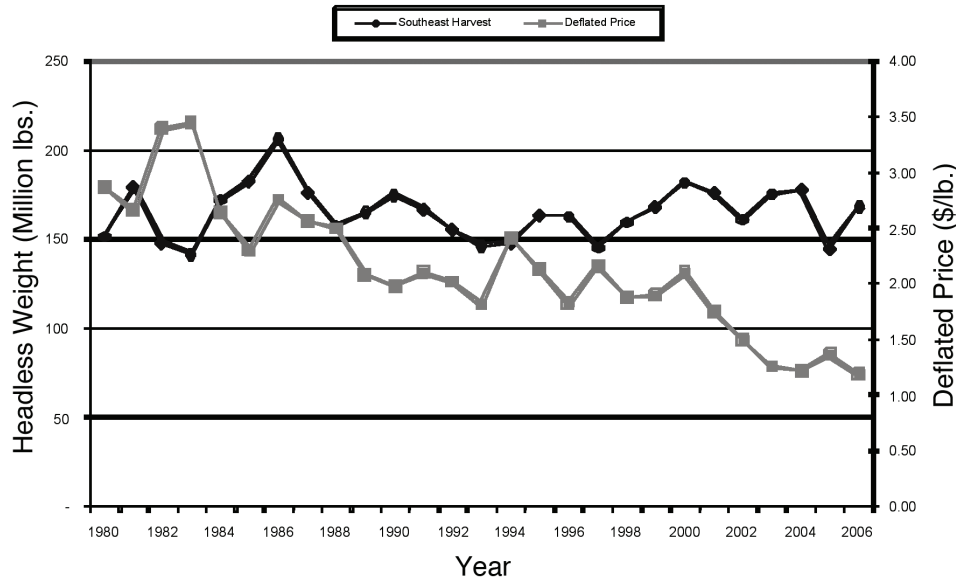
While the Southeast U.S.A. deflated dockside shrimp price has fallen rapidly since the 1980s, output, in the long run, has remained unchanged (figure 5). As a result, the deflated revenues generated from the fishery have fallen significantly, resulting in a significant amount of exit from both the harvesting and processing sectors.

## Attempts to Limit Imports

### *Initial Attempts*

The first serious attempt to limit imports occurred in 1975 when the USITC, through the public hearing process, reacted to a petition filed by the National Shrimp Congress. The subsequent hearing investigation in 1976 sought to determine whether shrimp products identified in item 114.45 of the Tariff Schedules of the U.S.A were being imported in quantities that caused serious injury to the domestic shrimp industry. The analysis and public testimony resulted in a finding of serious injury to the domestic capture fishery. Adjustment assistance permitted under Title II of the Trade Act was approved to allow shrimp-boat operators to obtain loans or loan guarantees. This action, it was reasoned, would help domestic shrimp fishermen become competitive with foreign producers. This initial investigation and subsequent action, one should note, occurred before cultured shrimp production became a significant factor.

Approximately five years later, it was pointed out that the adjustment assistance permitted under Title II of the Trade Act had actually failed to provide a remedy. In response, a bill was sponsored in the U.S. Congress to formulate policy, including a temporary quota combined with a 30% *ad valorem* tariff, to provide for domestic



**Figure 5.** Southeast U.S.A. Shrimp Landings (headless weight) and Deflated Price, 1980–2006

Source: USDOC (various years).

shrimp industry protection. Although the bill failed to receive the support necessary for passage, it was significant because it was introduced at the time when cultured shrimp was becoming an increasingly significant factor and because attention was focused on the harvesting sector.

The focus remained on the shrimp harvesting sector when, in 1985, the USITC again evaluated the shrimp import situation. Renewed supply increases, primarily from cultured activities, were being experienced.<sup>14</sup> The frequent forecasts of overseas successes of shrimp-farming companies were becoming a reality. The prospect of additional shrimp farming successes in Central America, South America, and Asia loomed on the business horizon. In explaining the situation to the USITC, the Southeast U.S.A. shrimp harvesters claimed: (i) that harvesting businesses were being injured as a result of imports, and (ii) that shrimp industries in foreign countries were benefiting from government assistance, which was artificially allowing their product to be more competitive in the U.S. market (USITC 1985). Following a staff review of the information and a public hearing, the USITC chose only to issue a report rather than to recommend any remedies.

The impetus for trade investigations for shrimp, as noted, emanated from the Southeast U.S.A. harvesting sector. Other components in the industry, most notably the processing sector, did not actively pursue import restraints. This leads one to speculate that domestic processors were, at a minimum, not being negatively impacted from the increasing imports and may have, in fact, been benefiting. Analyses by Roberts, Keithly, and Adams (1992) and Keithly and Roberts (1995) suggest that

<sup>14</sup> For example, Ecuador's exports to the U.S.A. nearly doubled during the 1980–84 period before falling marginally in 1985. Similarly, Asian exports nearly tripled from 46 million pounds to 121 million pounds.

in the 1980s and early 1990s, imported product was frequently used in domestic processing activities including those two products generally considered to be derived from domestic input; *i.e.*, headless, shell-on product and peeled raw product.

### *Most Recent Attempt*

There was little concerted effort by the domestic shrimp industry to limit imports during the 1990s. As the dockside price began to rapidly erode beginning in late 2001, however, the domestic industry began to organize and start a “war chest” for likely litigation proceedings.

At the end of 2003, the Southern Shrimp Alliance (SSA), a coalition of shrimp producers in eight southern states, filed a petition with the USDOC and the USITC.<sup>15</sup> The petition alleged that six countries—Brazil, Ecuador, India, Thailand, Vietnam, and China—were ‘dumping’ excess production in the U.S. market in order to increase their respective shares. After an initial finding of dumping by the USDOC, the USITC confirmed that dumping was occurring and set duties accordingly.<sup>16</sup> The scope of the order included certain warm-water shrimp and prawns, whether frozen, wild-caught or farm-raised, head-on or head-off, deveined or not deveined, cooked or raw, or otherwise processed in frozen form.

While relatively complete, a number of products were not included in the scope of the order (*i.e.*, subject to duty). Excluded products include the following: (i) breaded shrimp and prawns; (ii) shrimp and prawns generally classified in the *Pandalidae* family and commonly referred to as cold-water shrimp, in any state of processing; (iii) fresh shrimp and prawns whether shell-on or peeled; (iv) dried shrimp and prawns and shrimp and prawns in prepared meals; (v) canned shrimp and prawns; and (vi) certain dusted shrimp.

Of these excluded items, breaded shrimp, cold-water shrimp, and fresh shrimp were excluded from the original scope of merchandise covered by the investigation. Cold-water shrimp was excluded because it constitutes a very small portion of total U.S. imports (less than 5%) and because substitution of cold-water shrimp for warm-water shrimp is limited. Similarly, fresh shrimp imports have historically been negligible and were therefore excluded from the scope of investigation.<sup>17</sup> Breaded shrimp was excluded from the scope of investigation because it is of little or no relevance to the shrimp harvested in the U.S.A. Specifically, breaders have historically sourced their shrimp inputs overseas and purchase only minimal shrimp from domestic fishermen.<sup>18</sup> As importers, the interests of the breeding industry were adverse to the interests of the industry utilizing domestic shrimp and, as such, breaders would oppose the imposition of duties. As petitioners, the domestic shrimp industry controlled the scope of the investigation and, as such, the scope was written to exclude breaders.

Unlike breaded, cold-water, and fresh shrimp, canned shrimp was included in the scope of investigation. After investigation, however, the USITC concluded that imported like product (*i.e.*, canned shrimp) was not causing material injury to that

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<sup>15</sup> More accurately, the petition was filed by the Ad Hoc Shrimp Trade Action Committee, the Versaggi Shrimp Corporation, and the Indian Ridge Shrimp Company.

<sup>16</sup> Details of this petition, including a chronology of events leading the USITC’s findings, can be found in USITC (2005).

<sup>17</sup> A request was subsequently made to expand the scope of investigation to include fresh shrimp, but the USDOC declined to do so.

<sup>18</sup> Keithly and Roberts (1995) reported that virtually all Southeast U.S.A. breeding activities utilized imported product as inputs in the production process.

domestic segment of the industry, which consisted of a single producer, and, hence, excluded that product from the scope of order.

Of the products excluded from the scope of order, the product generating the most controversy was “dusted” shrimp.<sup>19</sup> While included in the initial investigation, the USDOC excluded the product in the final determination, despite petitioner’s objections.<sup>20</sup> In non-technical terms, ‘dusting’ refers to the addition of a thin coating of rice or wheat flour to the peeled shrimp product with the non-shrimp content constituting between 4% and 10% of the end product weight. Imports of this product prior to the period of investigation were negligible, and petitioners argued that excluding dusted shrimp from the scope of order (*i.e.*, duties) would open a “loophole” whereby importers could import the non-duty product and remove the coating after importing as a means of circumventing any anti-dumping duties.<sup>21</sup> Based on expert opinion, however, the USDOC concluded that “removal of the dusting layer would be costly, time consuming and fatal to the quality of the product” (p. 6). Given that “dusted shrimp is comprised of components that create clear physical characteristics that separate dusted shrimp from subject merchandise” and the change in physical characteristics to the raw product does not encourage removal of the coating after importation, the USDOC made a determination in the final stage of the investigation that dusted shrimp fell outside the scope of investigation and, hence, not subject to duty.

### Why Was the Petition Successful?

As discussed, U.S. antidumping laws are administered by both the USDOC and the USITC. In the first stage, the USDOC determines the existence and the degree to which dumping is occurring (*i.e.*, “unfair” pricing), and the finding of “unfair” pricing by the USDOC is the norm. The paucity of negative findings is expected given that “[t]he rules governing how the Department of Commerce calculates dumping margins are widely considered biased in favour of finding positive margins” (Prusa 2001, p. 598). The rules, as outlined by Elwell (2004), specify a hierarchy of methods. Preference is to be given to establishing a *home market index* which can be used to compare the price of the product being sold in its home market to the price with the alleged dumping price in the U.S.A. If home market sales are less than 5% of sales in the U.S. market, however, then a *third country index*, which relates the product price in another of the exporter’s foreign markets to the alleged dumping price in the U.S. market, becomes the preferred method for determining the existence and degree of dumping. Finally, in lieu of a *home market index* or a *third country index*, an index that attempts to measure the cost of production (including a normal rate of return), termed a *constructed value index*, is created. There is a considerable amount of latitude as to how this index can be created, including the use of data from surrogate countries.<sup>22</sup> As such, they are considered to be subject to substantial measurement error (Elwell 2004).

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<sup>19</sup> Dusted shrimp had not been well defined at the initial stage of the investigation and the USDOC, while including it within the scope of investigation, indicated that dusted shrimp might be excluded in the final determination. Since the product was not well defined, the USDOC solicited comments as to the appropriate definition. It accepted a definition proposed by two companies (Long John Silver’s Inc. and Eastern Fish Company). This definition led the USDOC to conclude that the amount of transformation to the product made it excludable from the scope of investigation.

<sup>20</sup> A detailed discussion regarding exclusion of this product is presented in United States Court of International Trade (2007).

<sup>21</sup> Henderson (2007) provides an interesting review of the issue.

<sup>22</sup> In theory, the surrogate country is determined in terms of having a comparable economy and being a significant producer of the product being investigated.

China and Vietnam are considered non-market economies and, hence, these two countries were considered separately in establishing duty rates. Since the governments of these two non-market economies were considered to control prices and costs, information provided by these countries was considered unreliable and, as such, the USDOC chose to develop constructed value indices. In the case of China, the surrogate country used to determine the dumping margin was India, while the surrogate country selected for Vietnam was Bangladesh.<sup>23</sup> For China, final estimated margins, as determined by the USDOC, ranged from 27.9% to 84.9% among named exporters found to be selling in the U.S. market at less than fair market value (one company was found not to be selling at below fair market value) and from 55.2% to 112.8% among non-named exporters.<sup>24</sup> For Vietnam, the final estimated margins ranged from 4.1% to 25.8% among named exporters and either 4.4% or 25.8% among non-named exporters (with the lower rate being given to those exporters who were able to demonstrate that they were not subject to government control in pricing activities).

Three of the market-based economies targeted in the antidumping petition—Ecuador, Thailand, and India—tended to fare much better than the two non-market based economies. Final estimated margins among Ecuadorian-named exporters ranged from 2.3% to 4.5%. The estimated margin for non-named Ecuadorian exporters equaled 3.3%. For Thailand, estimated margins across both named and non-named exporters fell in a narrow range that averaged about 6%, and the estimated margin for Indian exporters averaged approximately 10%. Unlike the other market-based economies listed in the petition, final estimated margins for Brazilian exporters were more in line with those of the two non-market economies. Among named Brazilian exporters, estimated final margins ranged from about 10% to almost 70% and 10.4% among the non-named exporters.

As noted, the SSA filed dumping actions on December 31, 2003. Filing before the end of the year was, to some extent, a tactical measure that allowed the SSA to use firm-level data for the years that the commercial fishing and processing sectors exhibited large financial losses.<sup>25</sup> Based upon responses from a survey administered by the USITC, it was concluded that operating margins to vessel owners (prior to subtraction of salaries) fell from 1.4% in 2001 to negative 9.8% in 2002 before recovering marginally to negative 6.6% in 2003. Similarly, while 65% of the domestic processors reported positive operating margins in 2001, more than one-half of the respondents reported operating losses in 2002 and 2003.

Given macro-economic conditions and changes in the international shrimp situation, the finding of large losses to the domestic harvesting and processing sectors was a foregone conclusion. Interrupting 10 years of solid growth, the U.S.A. entered a recession in March, 2001. The decline in economic activities was further undermined by the September 11, 2001 terrorist attack. Given that shrimp is largely consumed in the away-from-home market, which is strongly tied to economic conditions, the domestic events during 2001 undoubtedly resulted in a reduction in U.S. shrimp demand. By itself, this factor would likely have resulted in a significant de-

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<sup>23</sup> For a discussion of the rationale for the choice of these surrogate countries, see *Federal Register* (Vol. 69, No. 235, December 8, 2004).

<sup>24</sup> The lower margin (*i.e.*, duty) of 55.2% was imposed on companies that could demonstrate that they were not subject to government control, while the higher rate of 112.8% was imposed on all other non-named companies.

<sup>25</sup> In addition, the state of Louisiana had pledged \$600 thousand to the law firm that eventually represented the Southern Shrimp Alliance (SSA) in the anti-dumping petition contingent on a December 15 filing deadline. The state indicated that if that deadline was not met, the money would instead be given to a competing trade law firm (McGovern 2003)

cline in the domestic dockside price; hence negatively influencing profitability in the harvesting sector.

The U.S. recession, however, coincided with a number of other events that resulted in “record” increases in exports of shrimp to the U.S. market during the early- to mid-2000s. First, as noted, cultured shrimp was expanded rapidly from 2000 to 2003 (roughly the period of investigation), increasing from 2.2 billion pounds (live weight) to 4.0 billion pounds. While much of the increased production would normally have been directed to all three of the primary export markets—the U.S.A., Japan, and the E.U.—Japan, like the U.S.A., was entering a recession in the early 2000s and Japan absorbed none of the increased production.<sup>26</sup> Two factors in the E.U.—Thailand’s changing Generalized System of Preferences (GSP) in the E.U. and antibiotics—also led to diversion of export product from Asia to the U.S. market. As discussed by Debaere (2005), under the auspices of the GSP the E.U. has historically granted concessions on tariff rates to developing countries. In the 1996 regular review of the GSP, the E.U. announced that Thailand’s GSP benefits for shrimp would be phased out through 1999 and discontinued thereafter.<sup>27</sup> Analysis by Debaere (2005) concluded that the retraction of Thailand’s GSP status resulted in a significant trade diversion of Thai product from the E.U. to the U.S. market.

Similarly, analysis by Debaere (2005) concluded that “differences in food and safety standards” between the E.U. and the U.S.A. also contributed to significant trade diversion of East Asian product from the E.U. market to the U.S. market. In mid- to late-2001, specifically, reports began to surface in Europe that high levels of two antibiotics—chloramphenicol and nitrofurans—were being found in shipments of shrimp from East Asia (primarily China, Vietnam, and Thailand) to the European market. Both the E.U. and the U.S.A. maintain a zero tolerance for these two antibiotics because they may be harmful to humans. While both of these countries (regions) maintain a zero tolerance policy, differences existed in both detection methods and enforcement policy. For example, the E.U. utilized technology that allowed detection of between 0.1 and 0.3 parts per billion, while the U.S.A. initially used technology that would allow detection of 0.5 parts per billion. Similarly, to prevent contamination in the food chain, the E.U. placed a temporary ban on product coming from some countries (*i.e.*, China and Vietnam) and subjected almost all of the Thai imports to inspection during the height of the crisis. Product found to be contaminated was destroyed. As stated by Debaere (2005), the uncertainty in the European market from the taken actions “... provided an unanticipated surge of shrimp exports to the U.S.” (p. 9).

As a result of all of these factors, exports of shrimp to the U.S.A. increased from 740 million pounds (product weight) to 1.1 billion pounds, or by almost 50%, during the initial period of investigation (*i.e.*, 2000–03), and the Southeast U.S.A. deflated dockside price fell 40% from \$2.10 per pound (headless, shell-on weight) to \$1.26 per pound (figure 5). Given the depressed nature of the domestic shrimp industry (both the harvesting and processing sectors), the USITC found in favor of the petitioners which, in turn, led to the imposition of the duties as determined by the USDOC.

One of the distinguishing factors of this most recent investigation was the support it received from the domestic shrimp processing sector. While not universal, many of the Southeast U.S.A. processors were supportive of the petition and actively participated in it. The reason for the increased support by the domestic processing sector (other than breaders) reflected declining profitability in that sector. As noted, the initial increase in U.S. imports during the 1980s related to

<sup>26</sup> Japan’s shrimp imports declined from 544 million pounds in 2000 to 535 million pounds in 2003.

<sup>27</sup> This action resulted in an increase in the tariff rate on Thai raw shrimp exports to the E.U. from 4.5% to 12%.

expanding culture activities in South America were primarily in a headless, shell-on form and, hence, competed only indirectly with the larger Gulf and South Atlantic shrimp peeling facilities.<sup>28</sup> As exporting nations increasingly turned to value-added processing activities (particularly peeling), however, the imported product competed more directly with the domestic processed product resulting in a significant decline in marketing margins among domestic producers and increased exodus from the industry.<sup>29</sup> With low or negative industry profitability since 2001, the processing industry had no choice but to support the harvesting sector in the antidumping petition.

### Issues of Relevance

As is often the outcome in anti-dumping investigations, petitioners (*i.e.*, the domestic industry) are of the opinion that final estimated duties are unrealistically low, while the respondents (*i.e.*, the exporters) are of the opinion that the duties are unrealistically high. This was certainly the situation in the shrimp antidumping case. The duties determined in the preliminary stage of the investigation were considerably higher than the final estimated duties, and the petitioners (*i.e.*, the SSA) were understandably frustrated with the final outcome.<sup>30</sup> As noted by Gutting (2005), average antidumping duties have risen from about 15.5% in the early 1980s to more than 60% by 2000, an increase equal to approximately 2.5% per year, and the exporters, by this standard, could take solace that they were able to convince the USDOC that the preliminary margins were “wildly inflated.” Yet, the subject exporters did question several facets of the final duty determinations. Among the most contested issues was that of the “zeroing policy” employed by the USDOC in determining the final estimated margins. In practice, zeroing eliminates negative dumping margins (*i.e.*, those instances where the home price is higher than the U.S. price). If zeroing is prevalent, it can significantly inflate dumping margins. Ecuador challenged the methods used by the USDOC to calculate antidumping duties, and the World Trade Organization (WTO) appellate board (on January 30, 2007) issued a ruling in favor of Ecuador against the methods used by the U.S.A. to calculate shrimp antidumping duties (particularly the practice of zeroing). The USDOC subsequently announced that antidumping duties on shrimp from Ecuador would be terminated as of August 15, 2007.<sup>31</sup>

A second issue that has received considerable attention since the USITC final ruling is that of continuous 100% bonding. Historically, U.S. Customs and Border Patrol (CBP) required from U.S. importers a cash deposit equal to only a small portion of expected duty liability. After facing hundreds of millions of dollars in uncollected antidumping/countervailing duties on certain agriculture and aquaculture products, the CBP determined that there was a high risk of default among importers of aquaculture products which supported an increase in bond amounts.<sup>32</sup> Under the new bonding criteria, every shrimp importer was required to post a bond

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<sup>28</sup> In addition, a portion of the imported product was used as input by domestic peeling establishments on a seasonal basis when availability of domestic product was low (*i.e.*, during the winter months).

<sup>29</sup> As reported by Keithly *et al.* (2006), the number of Southeast U.S.A. shrimp processors fell from 173 in 1980 to 74 in 2004. During the decade of the 1980s, the decline was only 10% but increased to about 30% during the decade of the 1990s. Another 25% of the firms exited the industry during the five-year period ending in 2004.

<sup>30</sup> For example, the final estimated duties for the Brazilian firms not individually investigated equaled about 7% compared to the announced 24% during the preliminary stage of the investigation. See Gutting (2005) for a more complete discussion.

<sup>31</sup> Additional details of the USDOC ruling can be found in SSA (2007a).

<sup>32</sup> The elevated risk associated with importers of aquaculture merchandise reflects, in part, high turnover rates in the industry as well as many companies having little capital (USGAO 2008).

that would cover total projected imports (based on the previous year imports and the potential duty liability).<sup>33</sup> From an economic perspective, the increased bonding requirements are functionally equivalent to increasing the duty rate. It was argued by importers/exporters that this new criteria was imposed to further “control” exports to the U.S. market (*i.e.*, because some companies lacked access to the amount of capital required to post the larger bonds).<sup>34</sup> India and Thailand have both challenged the continuous bond set out by CBP in front of the WTO. The WTO has yet to issue its decision.

Finally, it is important to recognize that final margins, as determined by the USDOC, are simply estimates. Administrative reviews, which can take up to a year to complete, are initiated at the anniversary month of the dumping orders. These reviews, which can be intrusive and expensive to exporting companies, are used to determine the final duties that must be paid by importers during the previous year and, depending upon information provided, can be less or greater than the estimated margins.<sup>35</sup> As a result, liquidation may not occur for a substantial period of time after importation of the subject merchandise, which imposes a substantial amount of uncertainty on the importing firms.

At the request of the petitioner, the government will rescind review of individual exporting countries. The ability of the petitioner to have these reviews rescinded provides an incentive for to-be-reviewed exporting companies to negotiate with the petitioner. The settlement associated with these negotiations can take a variety of forms including a direct ‘settlement payment.’ In addition to payments being made by exporting companies to the SSA in lieu of undergoing a review, the SSA has reportedly used this process to obtain commitments from exporters to meet specified sanitary conditions with respect to product being exported to the U.S. market.<sup>36</sup>

## Impacts Related to the Antidumping Measures

As previously noted, much of the antidumping literature focuses on two themes: (*i*) whether antidumping measures reduce imports from named countries, often referred to as the ‘trade destruction’ effect and (*ii*) whether antidumping measures result in imports from named countries being replaced by imports from non-named countries, generally referred to as the trade diversion effect. While not considered in the literature (to the authors’ knowledge), trade diversion can also entail more than simply a change in trade patterns among named and non-named countries. Specifically, there can also be trade diversion from subject merchandise to non-subject merchandise. The issues of trade deflection and trade diversion, along with a brief examination of antidumping measures on the domestic dockside price, are considered in this section.

### *Impacts on Named Countries*

Exports from the six named countries to the U.S.A. during 1995–2006, expressed on a product weight basis, are presented in figure 6. As indicated, after a period of rela-

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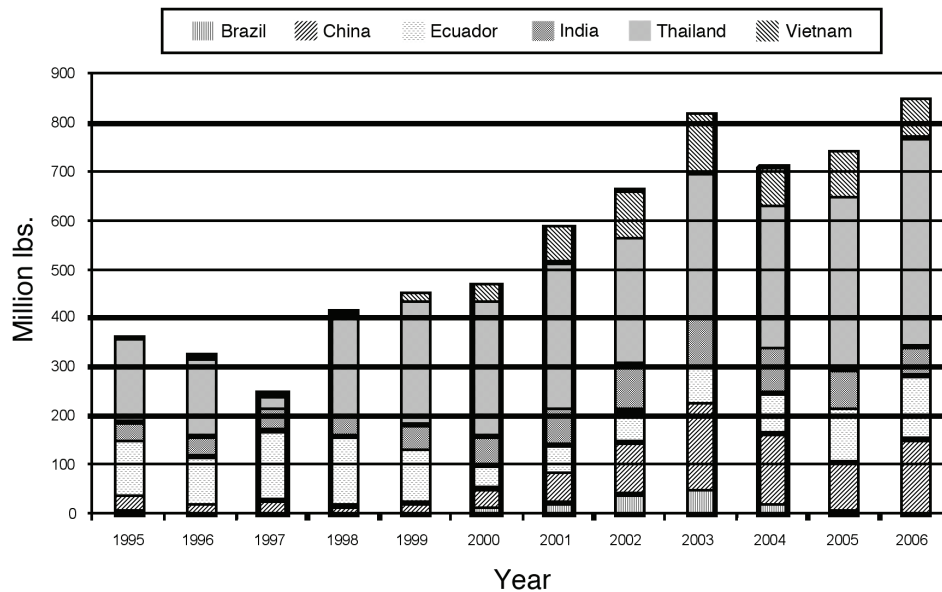
<sup>33</sup> See Gutting (February, 2005) for additional detail.

<sup>34</sup> The term “importers/exporters” is used here because in some instances the importers are also the exporters, and in other instances there have been agreements by the importers and exporters to each pay a portion of the assessed duty.

<sup>35</sup> Details of the administrative review process can be found in Gutting (2006).

<sup>36</sup> One additional benefit to the SSA of suspending these reviews is a more timely liquidation of the duties and payment of Byrd monies to the domestic industry.





**Figure 6.** U.S. Imports (product weight) From Six Named Countries, 1995–2006  
 Source: USDOC (various years).

tive stability, U.S. imports from these six countries increased rapidly from approximately 450 million pounds in 1999 to more than 800 million pounds in 2003. In association with the filing of the anti-dumping petition, U.S. imports from the named countries declined to approximately 700 million pounds in 2004, but by 2006 had returned to the pre-filing level.

Of interest is the fact that the initial sharp decline in imports from named countries (*i.e.*, the 111 million pound decline between 2003 and 2004) occurred during the period of investigation but prior to duties being imposed. When considered at the country level, the information in figure 6 suggests that exports to the U.S.A. from Vietnam declined by about 45 million pounds (35%) while exports from China to the U.S.A. fell by more than 30 million pounds (18%). Other named countries experiencing declines include Brazil (48 million pounds to 20.3 million pounds, or 58%) and India (10%). By comparison, Thailand’s exports to the U.S.A. remained virtually unchanged while Ecuador’s exports increased by almost 10%.

Among the four countries exhibiting declining exports to the U.S.A. during the period of investigation, only Brazil exhibited any significant decline in cultured shrimp production (a decline of 20 million pounds, expressed on a headless-weight basis). Other countries, most notably Vietnam, exhibited significant increases in cultured production (Vietnam’s production, expressed on a headless weight basis increased by approximately 60 million pounds). Similarly, exports from many of the named countries to the E.U. and Japan increased significantly between 2003 and 2004.<sup>37</sup> Stable or increasing cultured production in addition to increased exports to

<sup>37</sup> For example, exports from Brazil to the E.U. increased by about 20 million pounds, while exports from China and Vietnam increased by 50 million pounds and 35 million pounds, respectively. Similarly, exports from Vietnam to Japan advanced from 48 million pounds in 2003 to 54 million pounds in 2004.

the U.S. competitors (*i.e.*, the E.U. and Japan) suggests that there was a large ‘harassment effect’ associated with the shrimp antidumping petition and subsequent investigation.

While the fact that 2006 exports to the U.S.A. from named countries (851 million pounds) exceeded pre-investigation exports (*i.e.*, 822 million pounds) might lead to a tentative conclusion that duties had little impact on aggregate exports among named countries, a somewhat different picture emerges when examination is given to the individual countries in the investigation. Relatively high average estimated duties, for example, were placed on subject imports from both China and Vietnam. During the two-year period prior to the investigation (*i.e.*, 2002–03), imports from China averaged 162 million pounds and imports from Vietnam averaged 113 million pounds. By comparison, China’s exports averaged only 125 million pounds for the two-year period following the investigation (*i.e.*, 2005–06), while Vietnam’s exports averaged only 88 million pounds.

On the other hand, relatively low average estimated duties were imposed on subject merchandise from Ecuador and Thailand. Ecuador’s exports to the U.S.A. during the two-year period after the investigation averaged 120 million pounds compared to 70 million pounds for the two-year period prior to the investigation. Similarly, exports from Thailand to the U.S.A. averaged 391 million pounds during the two-year period after the investigation compared to 275 million pounds during the two-year period prior to the investigation.

Brazil is somewhat unique among the six named countries in that exports from that country to the U.S.A. all but ‘dried up’ after the investigation.<sup>38</sup> After rapid growth during the mid-1990s through 2002, Brazilian cultured shrimp production peaked at 125 million pounds (headless weight) in 2003 and by 2005 had fallen to 88 million pounds. While the decline in cultured production may have resulted in a decline in product being exported to the U.S.A., even in the absence of any final estimated duties, it was the combination of the two factors that culminated in Brazil, for all intents and purposes, exiting the U.S.A. market after the investigation. Specifically, reduced cultured production resulted in a higher cost per unit output. Given that the final duties are merely estimates, the annual review would result in a duty significantly higher than those initially estimated.<sup>39</sup> Aware of this situation, Brazilian companies, by and large, simply diverted their product from the U.S. market to the E.U. market. As such, E.U. imports of Brazilian product increased to an average of 80 million pounds annually during the two-year period after the U.S. investigation, which reflects more than a 25% increase when compared to the 63 million pounds exported to the E.U. during the two-year period prior to the investigation.<sup>40</sup> The increased exports to the E.U. are even more impressive in light of the fact that Brazilian cultured production fell sharply after 2003.

Based upon this discussion, one can conclude that U.S. imports from those countries penalized with the higher dumping duties on subject merchandise did decline, at least to some extent, as a result of antidumping measures. However, U.S. imports from those countries penalized with relatively low duties (*i.e.*, Ecuador and Thailand) exhibited no decline after duties were imposed on subject merchandise and, in fact, increased by a significant amount. One factor that might have contributed to the decline in subject merchandise among those countries most heavily

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<sup>38</sup> For the two years prior to the investigation, exports from Brazil to the U.S.A. averaged 44 million pounds annually compared to only 4 million pounds annually during the two-year period after the investigation.

<sup>39</sup> Details can be found in the *Federal Register* (Vol 72, No. 46), March 9, 2007.

<sup>40</sup> To the extent that this change in trade pattern influences the European price, one can view the change in trade pattern as an international trade externality (Bown and Crowley 2006).

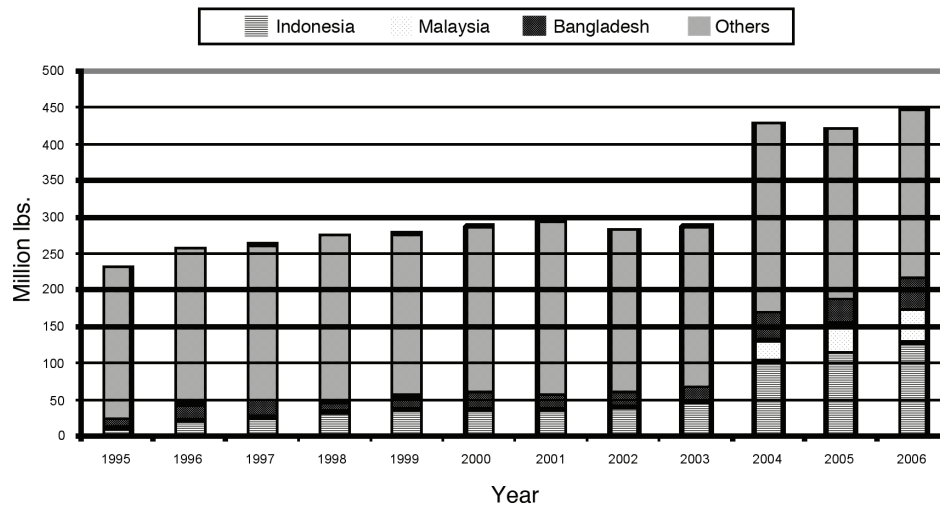
penalized is continuous 100% bonding imposed on importers. This requirement would increase costs to importers (by interest associated with the bond requirement) which likely reduced the demand for imported product.

*Trade Diversion Effects*

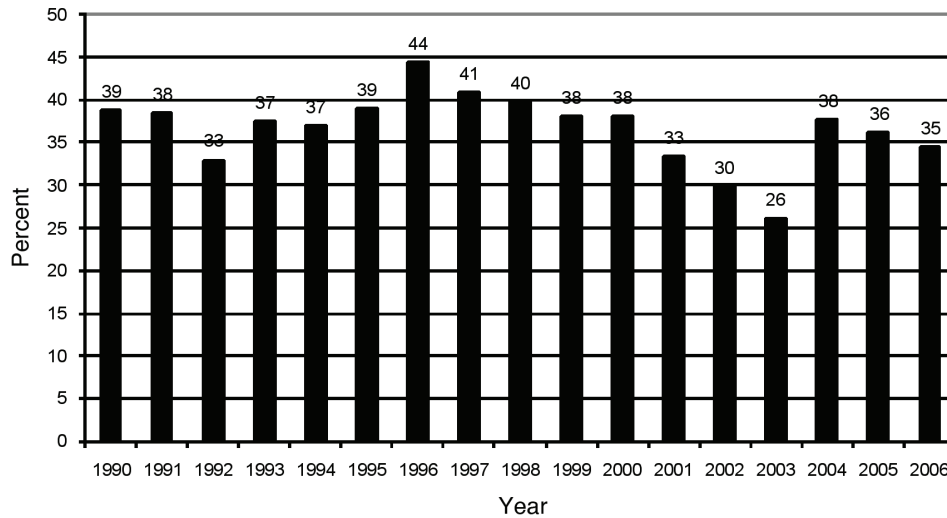
(a) Trade Diversion between Named and Non-named Countries

As indicated in figure 7, U.S. imports of shrimp from non-targeted countries consistently fell in the relatively narrow range of 250 million pounds to 300 million pounds prior to the investigation. Expressed on a percentage basis, the share of total U.S. imports from non-targeted countries fell over time from a high of 44% in 1996 to only 26% in 2003 (figure 8). Given the relatively constant U.S. imports from these countries prior to the petition, the declining share reflects increased imports from named countries.

With the onset of the investigation in 2004, exports from the non-named countries to the U.S.A. increased to more than 400 million pounds (figure 7) and the share represented by the non-named countries increased to almost 40% (figure 8). The increase in U.S. imports from non-named sources was widespread and included many of the Asian countries not included in the investigation. For example, U.S. imports from Indonesia increased from an average of 43 million pounds annually during the two-year period prior to the investigation (*i.e.*, 2002–03) to an average of 122 million pounds during the two-year period following the investigation (*i.e.*, 2005–06) and equaled 103 million pounds during the year of investigation (figure 7). Similarly, U.S. imports from Malaysia advanced from about three-million pounds annually during the two-year period prior to the investigation to about 40 million pounds annually during the two-year period after the investigation and



**Figure 7.** U.S. Imports (product weight) From Non-Named Countries, 1995–2006  
 Source: USDOC (various years).



**Figure 8.** Percentage of U.S. Shrimp Imports from Non-Named Countries, 1995–2006  
Source: calculations by authors.

equaled 28 million pounds during the year of investigation (figure 7).<sup>41</sup> Imports from Bangladesh also showed a significant increase.

While the increase in U.S. imports from non-named countries during and after the period of investigation is undeniable, the extent to which this increase reflects trade diversion as opposed to, say, increased cultured shrimp production in these non-named countries is somewhat more speculative. Reported cultured shrimp production in Indonesia, for example, advanced from 221 million pounds (headless weight) in the year prior to the investigation to 388 million pounds in 2005. Given the increased production, one would anticipate increased exports to the U.S.A., *ceteris paribus*. However, while U.S. imports from Indonesia increased by almost 80 million pounds, or approximately 185%, between the two years prior to the investigation and the two years following the investigation, a different picture emerges when these figures are compared to either Japan or the E.U. For example, Japan's imports from Indonesia averaged 117 million pounds annually in 2002–03, but only 98 million pounds during 2005–06; a decline of 15%. Similarly, exports from Indonesia to the E.U. averaged 43 million pounds annually in 2005–06 compared to 37 million pounds in 2002–03; an increase of only about 15%. Hence, U.S. growth clearly exceeded growth in either the E.U. or Japan, providing evidence of trade diversion.

Further evidence of trade diversion can be gleaned by comparing Japan's shrimp imports from targeted and non-targeted countries during the pre- and post-investigation periods and comparing the observed changes in these two countries with observed changes in the U.S.A. During the two-year period prior to the U.S. anti-

<sup>41</sup> There is evidence that some unknown proportion of the Indonesian imports is Chinese product which has been transshipped through Indonesia and labeled as Indonesia product. (The CBP found \$58 million of Chinese product entering the U.S.A. in 2006 was transshipped through Indonesia and labeled as Indonesia product.) Similarly, exports from China to Malaysia increased significantly during the same period of time that Malaysian exports to the U.S.A. increased (SSA 2007b).

dumping investigation (*i.e.*, 2002–03), Japan's imports from the four Asian countries included in the petition averaged approximately 250 million pounds annually compared to about 270 million pounds during the two-year period following the investigation. Among non-targeted Asian countries, Japan's imports averaged 170 million pounds annually during 2002–03 compared to about 153 million pounds annually during 2005–06. Hence, Japan's imports from the targeted Asian countries increased after the investigation, while its imports from the non-targeted countries decreased. By comparison, U.S. imports from targeted Asian countries advanced by about 7% for the two-year period after the investigation when compared to the two-year period prior to the investigation, while imports from non-targeted Asian countries more than doubled (from an average of about 85 million pounds annually to 222 million pounds).

A similar picture emerges when the E.U. is considered. Specifically, E.U. shrimp from Asian countries not targeted in the U.S. antidumping petition decreased by about 15% in 2005–06 when compared to the two-year period prior to the investigation. By comparison, E.U. imports from the four targeted Asian countries more than doubled (from an average of about 100 million pounds to almost 215 million pounds).

While some caution should be exercised in the evaluation of changes in the E.U. imports from targeted and non-targeted Asian sources (due to the temporary ban placed on product coming from some of the targeted countries), the evidence, on balance, suggests a large degree of trade diversion to the U.S. market of non-named product for named product. This conclusion, while in general agreement with findings by Prusa (1997, 2001), tends to differ from the conclusions reached of Malhotra, Rus, and Kassam (2008) who found little trade diversion of agricultural commodities from those countries not named in the antidumping petition.<sup>42</sup>

#### (b) Trade Diversion between Subject and Non-subject Merchandise

As noted, a number of shrimp products were not considered subject merchandise and, hence, excluded from duties. Two of these products that deserve some attention are breaded shrimp and dusted shrimp. Breaded shrimp was excluded from the scope of investigation because domestic breaders have, historically, not depended on domestic landings as a source of raw material in their processing activities. While included in the initial investigation, dusted shrimp was excluded from the final scope order at the discretion of the USDOC.

Prior to 2000, U.S. imports of breaded shrimp were negligible; generally less than 1 million pounds annually. From 2000 to 2003, U.S. imports of this product increased from about 4 million pounds to 19 million pounds (figure 4). This increase suggests that imports would have continued to increase even in the absence of antidumping duties. However, there is little doubt that antidumping duties accelerated the growth of U.S. imports of breaded product. Specifically, by 2005 U.S. imports of breaded shrimp had increased to 98 million pounds and approached the 110 million pound mark in 2006. The overwhelming majority of increased imports of this product are of Chinese origin which now account for about 80% of the total.

Imports of dusted shrimp, according to SSA estimates, have increased from less

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<sup>42</sup> While Malhotra, Rus, and Kassam (2008) found little trade diversion of agricultural commodities, significant trade diversion has been reported for fishery products. For example, both Anderson (1992) and Asche (2001) found that the imposition of anti-dumping and countervailing duties by the U.S.A. on Norwegian salmon had little impact on the total supply of product entering the U.S.A. because other producing countries were able to take over the Norwegian salmon market share.

than 100 thousand pounds in 2003 to more than 26 million pounds in 2006.<sup>43</sup> Virtually all the dusted product is from China, and it is the contention of the SSA that much of the product is imported in this form simply to circumvent duties.<sup>44</sup>

### *The Effect of the Antidumping Investigation on Dockside Price*

As noted, the Southeast U.S.A. deflated dockside shrimp price fell by approximately 40% between 2000 and 2003 (figure 5). Since 2003, however, the deflated price has been relatively stable. Hence, one might argue that the antidumping investigation and subsequent duties, while not being the panacea as envisioned by the petitioners, at least prevented any additional deterioration in price. The validity of this argument, however, needs to be tempered by the fact that there are three large import markets for cultured shrimp products, and changes in regulations and/or macroeconomic factors in any of the markets can alter trade flows and, hence, the Southeast U.S.A. dockside shrimp price. As noted, in 2001 the E.U. imposed a temporary ban on shrimp products originating from some of the Southeast Asian countries (*i.e.*, China and Vietnam). This ban resulted in a change in trade flows with much of the banned product being redirected to the U.S. market. As the ban was gradually relaxed, product that had previously been redirected to the U.S. market was subsequently shipped to the E.U. market. In short, without a more formal analysis it is difficult to assess whether post-2003 stability in Southeast U.S.A. dockside shrimp price reflects: (*i*) effects associated with the antidumping order, (*ii*) changes in regulatory and/or macroeconomic factors in the U.S.A. vis-à-vis other primary shrimp importing countries, or (*iii*) some amalgam.

### **Concluding Remarks**

While not well documented, growth in the output of cultured shrimp is undoubtedly the result of productivity gains, and these gains have resulted in an increasing amount of product being placed in the world trade market. Of the three primary import markets for warm-water shrimp (*i.e.*, the U.S.A., the E.U., and Japan), the U.S.A. has the largest domestic harvesting and processing sector that would be negatively impacted via the reduction in price.

In an effort to insulate itself from the increasing imports and continued suppression of profits, a coalition of harvesters and processors filed a petition at the end of 2003 alleging unfair trade practices by six of the major shrimp exporting countries. The resulting investigation confirmed unfair trading and injury to the domestic industry and antidumping duties were subsequently imposed.

The analysis presented in this article suggests that antidumping duties have provided only marginal protection to the domestic industry. In some cases, estimated duties were relatively minor (*e.g.*, Ecuador and Thailand), and in those cases where estimated duties were relatively high (*e.g.*, China), exporters were, to some extent, able to circumvent the duties by shipping non-subject merchandise. There also ap-

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<sup>43</sup> There is no harmonized tariff code for dusted shrimp.

<sup>44</sup> As evidence, the SSA had asserted that while imports of dusted shrimp have dramatically increased during 2003–06 “...U.S. breeding production has experienced a dramatic decline during the same time period, indicating that ‘dusted’ shrimp are not being breaded as intended. It appears that the process is easily reversed and, as such, the product competes directly with the domestically produced shrimp intended for protection under the antidumping order” (SSA 2007b).

pears to have been a large amount of trade diversion to non-named countries. These results lead to the conclusion that productivity increases, to the extent that they will continue, will further erode profitability in the domestic industry. This is even more acutely the case if the “zeroing” and continuous bonding issues are resolved in favor of the exporters.

Finally, while the antidumping duties appear to have protected the domestic shrimp industry only marginally, the duties have provided the industry with considerable funds that can be used for a variety of purposes including, but not limited to, promotion, restructuring of the industry, and enhancing sanitary conditions of the imported product (hence, a form of non-tariff barrier). These funds represent both negotiated settlements to rescind reviews and Byrd monies. The extent to which the domestic industry uses these monies in an efficient manner that will have long-term benefits to the industry is, at this point, a matter of speculation.

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