Modeling the Structural Change in American Frozen Catfish Fillet Demand: An Analysis of Country of Origin Labeling and the Implementation of an Import Tariff

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Background

The U.S. catfish industry began in the Mississippi Delta in the late 1960's when commercial fisherman would harvest catfish in lakes and rivers selling them locally. Commercial production began in the 1970's with roughly 37, 000 water acres in production (MSU extension 2003). With the advent of an advertising campaign and increasing health awareness among consumers (catfish tend to be low in fat, calories, and cholesterol) demand for catfish grew through the 1970's and 1980's. Today the catfish industry is comprised of 1,625 farms with over 196,590 total water acres with over 95 percent of the catfish acreage is located in Mississippi, Alabama, Louisiana, and Arkansas (MSU extension 2003). In these four states the catfish industry accounts for over 4 billion dollars of revenue per year, 13,000 direct jobs and 28,000 indirect jobs. In Mississippi the catfish industry is the fourth largest agricultural commodity in the state, in terms of dollars. The major markets for catfish are fresh fish and the frozen fillet sector which accounts for over 65% of total catfish sales.

In recent years American catfish producers have faced competition from Vietnam, Brazil and China in the U.S. market with 20%, 2%, and 3% market share of frozen fillets respectively (Narong 2003). Vietnam the world's second largest catfish producer has over 400,000 catfish producers in the Mekong Delta (fish production per farm is typically much smaller in Vietnam explaining the discrepancy in comparative farmers). The United States is not a net exporter of catfish where as Vietnam exports about one third of their stock to the United States. In 2002 Vietnamese fish consisted of 91% of total imported catfish into the United States with the remainder being split between Brazil and China. American catfish farmers sought protection against what they called "unfairly low"

import prices from Vietnamese exporters. The Catfish Farmers of America (CFA) lobbied a complaint which resulted in import tariffs on Vietnamese fish. Studies have been conducted looking at the demand elasticities for catfish but less have taken into consideration how the tariff imposed on imported catfish intended to "help" may actually be "harming" demand for catfish as a whole. This study attempts to answer how mandatory country of origin (COOL) labeling and the implementation of an import tariff affected the demand for American produced frozen catfish fillets (APFCF).

A Catfish is a Catfish Isn't It?

In 1996, following normalization in trade relations, Vietnamese fish farmers began to export frozen catfish fillets to the United States. Between 1998 and 2002 the amount of fillets imported from Vietnam increased roughly 20 fold (Phan, 2003). In 2001, the U.S. imported over thirteen thousand tons of Vietnamese fish valued at thirty eight million dollars. In 2002, that number climbed to fifty five million dollars, accounting for one fifth of the American market (Tran Dinh, 2003). U.S. produced catfish and products imported from Vietnam are not identical although are considered by some to be perfect substitutes. The Vietnamese product is actually "Basa" a member of the catfish family. Basa know by its scientific name, *Pangasius bocourti*, is one of 21 species belonging to the Pangasiidae family of catfish, which is found throughout most of Southeast Asia. Seeing their market share slip away to Vietnam the CFA successfully lobbied for only one type of catfish, *Ictaluridae*, out of two thousand, to be labeled as "catfish" in American stores, making it mandatory to label all catfish imported from

Vietnam as basa[12]. "Government intervention in labeling in the United States has served three main purposes: to ensure fair competition among producers, to increase consumers' access to information, and to reduce risks to individual consumer safety and health" (Golan et. al. 2000). American catfish producers highlighted all three of the aforementioned reasons for government intervention to be applied to the Vietnamese situation. Due to the strict labeling of the origin of Vietnamese fish, a form of COOL was implemented. The CFA victory helped in retail stores where consumers could see the label, but most catfish consumption is in restaurants which require no labeling and thus did not hinder growing demand of cheaper basa imports[3].

Communist Dumping?

Vietnamese producers had a significant cost advantage, presumably due to the higher cost of labor in the U.S.. Labor accounts for roughly 17% of the production cost of production of catfish in the U.S (MSU extension 2003). Furthermore, while U.S. producers must construct ponds (roughly $1500 per water acre) and invest in aeration equipment ($800 per water acre), their Vietnamese counterparts simply use flowing rivers (Avery and Hanson, 2001). Feed is the highest input cost in the United States due to its highly processed nature and its specific ratios of different ingredients. Conversely, Vietnamese fisherman use relatively cheap homemade feed consisting of waste from sea fish. Another large complaint that American producers had was that Vietnam did not let

[1] This was partially brought about because some Vietnamese producers stamping the title Delta Pride (which is an American processor) on the side of their boxes. The Vietnamese claimed they were referring the to Mekong Delta.

[2] The 2002 Farm Bill included Country of Origin Labeling (COOL) in which selected portions were passed including wild fish, and farm raised fish. Section 747 states that the Food and Drug Administration can only allow admission of fish or fish products labeled wholly or in part as 'catfish' if the products are taxonomically from the family *Ictaluridae* (Harvey and Blayney, 2002).

[3] Estimates in November 2002 was that wholesale price of fresh American raised catfish fillets was $2.80 per/lb. compared to $1.80 per/lb for the Vietnamese basa (Hanson and Sites, 2003).

their currency float, and thus the Vietnamese government was artificially devaluing their currency to make their exports more attractive (Aguiar et. al, 2005).

In 2002, the CFA, who still saw their market share slipping, accused Vietnam of dumping catfish on the U.S. market. Dumping is simply exporting a product for less than its cost of production. The WTO defines market price based on the price of a good in its home country, or on the cost plus an allowance for selling cost and profit (Thanh, 2003). Using the WTO's dumping margin calculator, it was found that Vietnam was in fact guilty of dumping.[4] The CFA claimed that the normal price of frozen basa filets was $4.19 per/lb. and they were being sold in the United States for $1.44 per/lb. The CFA claimed that due to their Socialist nature, state-owned banks gave favorable rates to Vietnamese catfish farmers, that Vietnam did not have competitive markets for land, and that they supported services and other costs for producing catfish. To prove that dumping was actually taking place the CFA had to calculate a cost of production for the non market economy of Vietnam and prove that it was exporting below that cost.

Market vs. Non Market Economies

As a bias of comparison for the cost of production of the Vietnamese basa, the CFA pushed the Department of Commerce (DOC) to use the Indian torpedo shaped catfish. As shown in table 1, the value of the frozen export fillet from the Indian fish is twice that of the Vietnamese fish. The Vietnamese question the rational of using India as

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[4]Vietnam scored a 190.04, with anything over 100 considered dumping. This score is calculated by first finding export price by calculating on a net-price basis. Selling cost like advertisement, insurance, and transportation costs are deducted from the gross price to obtain the "factory-gate" export price. Next, since Vietnam is not a market economy the products normal value must be "constructed" rather than calculated. Quantities of the factors of production such as labor, energy, and other input costs are obtained from the exporter and multiplied by comparative prices obtained from a "comparable market economy"(in this case India) to calculate a unit production cost. The normal value is equal to the unit cost plus any overhead in the comparable market economy. The dumping margin is then calculated by the difference between the (normal value - export price) / export price. (United States International Trade Commission, 2006).

a proxy, claiming that it was used for the simple reason of proving Americas point on dumping[5]. These claims can be legitimized first by the fact that although called catfish, the Indian torpedo-shaped catfish posses characteristics (mainly feeding habits, and thus input amounts and costs) that are different from the Vietnamese Basa. A study completed at the San Francisco Federal Reserve showed that unit labor costs (or wages adjusted for productivity) were actually higher in India than in the US (Pham, 2003). Conversely, a study conducted by the Economist Intelligence Unit concluded that unit labor costs in Vietnam are 70 percent lower than in the US (Pham, 2003). Higher labor costs translate into higher prices. So it is evident that the CFA had much to gain by pushing for India to be used as their market proxy to emphasize the alleged dumping. The DOC whose job is not to calculate compensation amounts, but rather simply determine whether damage has been done, sided with the Catfish Farmers of American and chose India as the market proxy.

In February 2003 the DOC found Vietnamese exporters guilty of dumping on the American market. A subsequent meeting of the US International Trade Committee (ITC) found that Vietnam had in fact caused damage to the US catfish market. The ITC then imposed 37-64% tariff duties on imported Vietnamese basa.

Implementation of the Tariff

The US ITC ruled that the tariff amount would vary depending on which company the basa was exported by within Vietnam. The largest producer, An Giang (accounting for 26% of total exports to the United States), was levied the heaviest tariff of 62% due to its

[5] Five countries were under consideration by the Department of Commerce to be used as a market proxy for Vietnam: India, Pakistan, Bangladesh, Kenya and Guinea. The US catfish farmers lobbied for India to be used because it would be most advantageous to them. Conversely, Vietnamese firms pushed for Bangladesh to be used. (Thanh, 2003)

beneficial treatment from the Vietnamese government in loans and other input subsides. The commerce department ruled that six other prominent producers would face a 49% tariff. These tariffs would subsequently be paid by the American importers. The tariff would be applied to frozen fillets, including regular, shank, and strip fillets (breaded and unbreaded) basa and tra (another fish raised in Vietnam) (Nargo, 2003). The rational behind the tariff was to make it more difficult for the Vietnamese producers to penetrate the American market, thus making American catfish more attractive to domestic consumers. This issue that this paper attempts analyze is two fold 1) the effect of the tariff on Vietnamese basa and 2) The effect of the implantation of mandatory country of origin labeling.

AIDS Model

The Almost Ideal Demand System (AIDS) model (Deaton and Muellbauer, 1980) completely satisfies the axioms of demand. This model provides a first order approximation to an arbitrary demand system and satisfies perfect aggregation conditions over consumers. The model is grounded in a well-structured analytical framework, accommodates certain types of aggregation, is easy to estimate, and permits testing of the standard restrictions of classical demand theory (Buse, 1994). The AIDS model will be used to attempt to illustrate the effects of the tariff implementation on demand and the level and willingness that consumers will substitute away from catfish. The AIDS model was chosen due to its flexibility. That being said, this paper attempts to follow previous literature (Eales and Unnevehr, 1988) in that who find that the AIDS model removes the possibility in aggregation bias. The general form of the AIDS model as put forth by Deaton and Muellbauer 1980 and which will be applied are as follows

$$W_i = \alpha_i + \sum_j \gamma_{ij} \ln(p_j) + \beta_i \ln(x/P) \quad (1)$$

for all i, where w_i is the expenditure share of the *i*th commodity, p_j are prices, X is the total expenditure on all commodities in the system. Where p_j represents nominal prices for good $_j$, and P represents a price index which is approximated using the Stones Geometric index, and

$$\ln(P) = \alpha_o + \sum_i \alpha_i \ln(p_i) + 1/2\left(\sum_i \sum_j \gamma_{ij} \ln(p_i)\ln(p_j)\right) \quad (2)$$

is a price index. Imposing the basic demand restrictions, adding up, homogeneity, and symmetry can be expressed respectively as follows

$$\sum_i \alpha_i = 1 \quad \sum_i \gamma_{ij} = 0 \quad \sum_i \beta_i = 0 \quad (3)$$

$$\sum_j \gamma_{ij} = 0 \quad (4)$$

$$\gamma_{ij} = \gamma_{ji} \quad (5)$$

which are imposed or tested. The adding up conditions implies a singular variance-covariance matrix for the disturbances and this is handled by deleting the *n*th equation.

Data and Empirical Specification

Data from the 2005 United States Catfish Database published by the USDA National Agricultural Statistics Service (NASS) from January 1988 to December 2005 for a total number of 205 observations was used in the estimation of the model. The model analyzes the budget share spent on frozen American produced frozen catfish fillets (APFCF) measured in 1000's of pounds[6]. The price of (APFCF) per pound will be used

[6] It worth noting that only fillet demand is being measured; the reason behind this is that the majority of the value associated with a catfish lies in the fillet. A U.S. International Trade Commission report estimated

respectively to calculate own price elasticities. The price of pork, price of beef, and price of chicken in dollars per pound were also monthly observations collected from the USDA and were used calculate substitutability and cross price elasticities. Per capita consumption of catfish was observed on a monthly basis and chicken, pork and beef on a quarterly basis.[7] The amount of monthly imported frozen catfish fillets in thousands of pounds will also be included to see if imports affect the demand for APFCF.

Since the majority of consumption 48% of catfish takes place in five states (Texas, Tennessee, Florida, California, and Illinois) the per capita income for those states will be averaged and used as a proxy for the averages catfish consumers income level. The data for per capita income was collected through the US Census Bureau and was a weighted average based on state population and represented in the following equation

$$X^{avg} = \frac{1}{t}\sum_{t=1} \frac{\sum_{i} X_{it} Pop_{it}}{\sum_{i=1}^{5} Pop_{it}} \tag{6}$$

Where X_{it} is the per capita income for state $_i$ at time period $_t$ where $_t$ runs from 1 to 205. Pop_{it} is the total population for state $_i$ at time period $_t$. These states were selected and their per capita income disaggregated from the national average because it would give a more precise estimate about the true demand for catfish. It should be noted that per capita income was not used in the calculation of the budget share rather food expenditure which was calculated as follows:

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that when dealing with frozen fillets that they account for 50.3% of the total value of the fish. With the frozen fillet only accounting for 42% of the total weight of the fish.

[7] Since pork, beef, and chicken per capita consumption was reported by the USDA on a quarterly basis the data was divided by three as to obtain monthly per capita consumption. The author acknowledges the potential problems that this may cause, such as loss of specific month seasonality. However, monthly per capita consumption could not be found for chicken, pork, and beef

$$\text{Exp}= \sum_{i=1}^{N}(P_i Q_i) \quad (7)$$

where N runs from 1 to four with P_i being the price of good $_i$ and Q_i being the monthly per capita consumption of good i. A dummy variable will be used to indicate the months that Lent falls in. Lent is the time between Ash Wednesday and Easter when generally Catholics abstain from eating any meat besides fish on Fridays, that being said *a priori* one would hypothesize that consumption of fish would increase during Lent. The International Trade Administration released their new report on March 21, 2006 which maintained the Vietnam-wide tariff of 63.88% on all imported catfish fillets. This is the rate that has been imposed on all Vietnamese imports since February of 2003. A dummy variable will be used indicating the start of the tariffacation of Vietnamese imports.

Results

The nonlinear AIDS regression output calculated the budget shares for each of the goods. Not surprisingly it was found that beef had the largest share at 49.23% followed by pork, chicken, and APFCF at 32.08%, 18.35%, and 0.24% respectively. Both the adding up condition and symmetry were found to hold. Table 2 illustrates how the various goods impacts the others budget share.

Cross Price, Own Price, and Income Elasticities

The hicksian compensated cross price and own price elasticities were calculated and listed in Table 3. APFCF own price elasticity is -0.153 classifying it as a normal good. All of the own price elasticities were well behaved in the sense that they were all negative. The cross price elasticities for pork and chicken illustrate that they are substitutes for APFCF which would make intuitive sense. Oddly, the cross price between

APFCF and beef is -1.26 which would make APFCF and beef compliments which seems nebulous.

Per Capita Income Affect

As the monthly per capita income (which is different than the aforementioned food expenditure, being that food expenditure is income only spent on food) increased by one unit the budget share of APFCF decreased by 0.0006 units statistically significant at the 1% level. Meaning that catfish would be classified as an inferior good for as income rises it is substituted away from. This makes intuitive since because most would regard catfish as a "low income" food. Pork was found to be a normal good, although its coefficient was not found to be statistically significant.[8] Oddly, as monthly per capita income increases by one unit the budget share of chicken actually decreases by 0.176 statistically significant at the 1% level. This would classify chicken like catfish, as an inferior good .One explanation for this seemingly counterintuitive result is that the chicken variable is all chicken; whole, and processed. If the data was disaggregated to the level of processed and unprocessed chicken, *a priori*, one would think that processed chicken would be a normal good and unprocessed chicken would be an inferior good. That being said, it may be the case that the unprocessed inferior value is larger than the processed normal value, which would make aggregated chicken an inferior good.

The results for beef are not as nebulous with a marginal increase in the monthly per capita income leading to a 0.178 unit increase the budget share of beef. However, the same aggregation that plagued chicken inflicts beef as well. Brester and Wohlgenant

[8] Interestingly the author ran a similar model encompassing all of the United States and pork was found to be an inferior good. This would indicate that the United States as a whole views pork as an inferior good, whereas, the six deep southern states view it as a normal good. This is an excellent example of regional differences in cuisine. These findings seems to be backed up by the Continuing Survey of Food Intakes by Individuals (CSFII) that higher income consumers tend to consume less pork (Davis and Biing-Hwan).

(1991) found that if beef was disaggregated into table cuts and ground that ground beef was an inferior good and table cuts was a normal good. So in that sense one could view table cuts as a luxury good and ground beef as a necessity good. When beef is aggregated this study shows it to be a necessity good.

Effects of Lent on Per Capita Consumption

As hypothesized the months that Lent fell in was associated with a larger budget share of APFCF. The Lent dummy variable was only statistically significant for APFCF and beef. It was found that APFCF budget share increased by 0.00025 units, statistically significant at the 1% level. This makes intuitive sense because many restaurants during Lent will have fish specials on Fridays thus increasing the demand for frozen catfish fillets. While the budget share of catfish increased during Lent chicken, and pork were not found to be statistically significant at the 10% level.

Effects of Imports of Frozen Catfish Fillets on Budget Share

The basis of the Catfish Farmers of America (CFA) argument was that the sheer volume of Vietnamese fish dumped on the American market was hurting demand for American produced frozen catfish fillets. The model seems to support this claim, albeit in the slightest margin, by showing that for a one unit increase in the amount of frozen fillets imported monthly that budget share of APFCF decreased by 0.02E-9 units statistically significant at the 1% level. To illustrate just how imports affected APFCF the most extreme cases will be analyzed. The largest single month increase in imports is 958,000 pounds from December 1989 to January 1990 (66,000 and 1,024,000 respectively). Given that and using the coefficient from the model the difference in the budget share for APFCF is only -1.94E-04, or a 8.4% decrease from the average budget

share over the entire period (-0.000194/.00238). Conversely, the largest monthly decrease of imports was 1,062,000 from January 2003 to February 2003, the month that the tariff went into effect; (Figure 1) the budget share for APFCF increased by 9.7% (Figure 2). Figure 2 illustrates the fact that there have been anomalies where the budget share of APFCF increases/decreases by relatively large amounts (± 5%) from the mean, but on average, contrary to what the CFA claim it has remained relatively consistent throughout the years

Some have suggested that the Asian imports are finding a niche market and extracting a premium from being from an "exotic" location through the implementation of COOL. That being said, it could be that the imported fish is not a substitute for APFCF, but have created a new market altogether. That would explain the relatively small coefficient of the amount of monthly imports effect on demand. If it is the case that a new market has been created for basa then the CFA lose some validity in their case.

Effects of the Implementation of the Import Tariff

The effects of the import tariff seem to confirm the aforementioned theory above that basa and catfish have developed two separate markets through the mandatory implantation of COOL. The coefficient of the dummy variable for the tariffs effect on the budget share of APFCF was -0.1588 and was statistically significant at the 5% level. This indicates that when the tariff was introduced on imported catfish that the budget share decreased on APFCF, the opposite of what theory would have led us to believe. If there are the two goods are not substitutes which the Vietnamese insist, then this result makes intuitive sense. If the goods were substitutes then theoretical the sign on the coefficient should be positive. The theory that the two goods have created separate markets and are

not true substitutes seems to be supported by a U.S. International Trade Commission report (2006). The report which was used in the investigation of possible dumping finds that fifteen of the eighteen of the interviewed domestic processors and six of seven of the interview importers reported that there are significant differences in product characteristics or sales conditions between domestic catfish and basa imported from Vietnam. The differences were listed as taste, texture, color, and name recognition which would seem to classify these goods as different products and not perfect substitutes. This may help to explain why the tariff on imported Vietnamese basa had initially effect the budget share for APFCF the month after implementation and then had little to no effect.

Conclusions

Although the Catfish Farmers of America lobbied that Vietnamese imports were unfairly eating away at their market share with fish dumped on U.S. consumers, this report can not confirm this. The CFA claimed that the Vietnamese had 20% of the domestic market, but from what this analysis shows the imported fish “basa” may have developed a market completely separate from APFCF and so the 20% figure may in fact be a result of old catfish consumers now entering the newly created basa market. This argument seems to be back up by the United States International Trade Commission report that showed that fifteen of the eighteen of the interviewed domestic processors and six of seven of the interview importers reported that there are significant differences in product characteristics or sales conditions between domestic catfish and basa imported from Vietnam. The implementation of the tariff did have a significant impact on budget share increasing in the first month by 9.7% but then in the subsequent months actually decreased the budget share by .05% from its pre-tariff mean.

It seems that there where two distinctive affects from the actions taken by the United States government 1) the effects of the mandatory country of origin labeling and 2) the effects from the tariff on imports of basa. The data would suggest that the first effort, in 2002, of the CFA to help protect domestic production may have actually had adverse effects. That is, by mandating that Vietnamese catfish be labeled as basa, a new market was created. This new market seems to have favorably differentiated the Vietnamese product from the American product thus bolstering Vietnamese demand and harming American demand. The second attempt to protect the domestic industry was to implement a tariff on all imports in February 2003. By doing so the price for the Vietnamese product increased so demand for APFCF should have increased and demand for Vietnamese product should have decreased. However, since the market had been segmented by the mandatory COOL (2002) before the tariff implementation (2003) it would seem as if the structural change in demand for Vietnamese and American products was dominated by the labeling effect not the tariff effect. That is, the relative magnitude of the COOL increased the demand for Vietnamese basa more than the relative magnitude of the tariff decreased the demand for basa. So, by segmenting the market through COOL and favorably differentiating the market towards the Vietnamese basa the relative magnitude of the tariff was mitigated.

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Table 1. Comparison of Vietnamese Basa to its Proxy the Indian Torpedo-Shaped Catfish

	Indian Torpedo-Shaped Catfish	*Vietnamese Basa*
Price of Fingerlings	$.49 (per/lb)	$.46 (per/lb)
Feed Ratio	3.5/1	3/1
Price of Live Fish	$.55 (per/lb)	$.50 (per/lb)
Export Price of Frozen Fillets	$3.33 (per/lb)	$1.30 (per/lb)

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Table 2. Results for the Nonlinear AIDS Model

Variable	Coefficient	Standard Error	t stat
Per Capita Income (catfish)	-6.04E-03	2.80E-04	-21.60*
Per Capita Income (chicken)	-0.176	5.43E-03	-32.50*
Per Capita Income (pork)	4.40E-03	1.22E-02	0.36
Lent Dummy (catfish)	2.51E-04	4.74E-05	5.30*
Lent Dummy (chicken)	1.24E-03	1.12E-03	1.1
Lent Dummy (pork)	1.42E-03	2.28E-03	0.62
Catfish Imports (catfish) BS	-2.03E-10	4.76E-11	-4.27*
Catfish Imports (chicken) BS	-4.18E-09	1.07E-09	-3.89*
Catfish Imports (pork) BS	-2.26E-09	2.21E-09	-1.02
Catfish Tariff Dummy (catfish) BS	-1.59E-04	8.48E-05	-1.87**
Catfish Tariff Dummy (chicken) BS	3.26E-03	1.88E-03	1.73**
Catfish Tariff Dummy (pork) BS	-5.96E-03	3.82E-03	-1.55***
α_1	6.34E-02	2.99E-03	21.17*
α_2	0.24	0.128	1.88**
α_3	2.05	6.04E-02	33.93*
γ_{11}	2.13E-03	2.25E-04	9.49*
γ_{12}	5.56E-04	4.82E-04	1.15***
γ_{13}	4.99E-03	1.18E-03	4.23*
γ_{22}	0.14135	1.66E-02	8.49*
γ_{23}	-2.95E-02	1.36E-02	-2.16**
γ_{33}	0.26	2.29E-02	11.68*
β_1	2.22E-03	7.79E-04	2.84*
β_2	1.25E-02	9.05E-03	1.37***
β_3	7.76E-02	1.64E-02	4.74*

Note 1=catfish 2=pork 3=chicken 4=beef
R^2= 0.921
Adj. R^2= 0.911
* indicates significance at the 1% level
** indicates significance at the 5% level
*** indicates significance at the 10% level
Number of observations = 204

Recovered Terms

γ_{14} = -0.007	
γ_{24} = -0.112	
γ_{34} = -0.242	
γ_{44} = 0.362	
β_4 = -0.092	
Per Capita Income (beef)	= 0.178
Lent Dummy (beef)	= -0.0029
Catfish Imports (beef) BS	= 0.623E-8
Catfish Tariff Dummy (beef) BS	= 0.0025

Table3 Compensated Hicksian Demands

Compensated Hicksian Demands

	Catfish	Pork	Chicken	Beef
Catfish	**-0.153**	0.617	0.799	-1.262
Pork	0.0019	**-0.235**	0.029	0.204
Chicken	0.0058	0.188	**-0.033**	-0.16
Beef	-0.0026	0.08	-0.01	**-0.067**

Figure 1. Amount of Frozen Catfish Fillets Imported into the United States

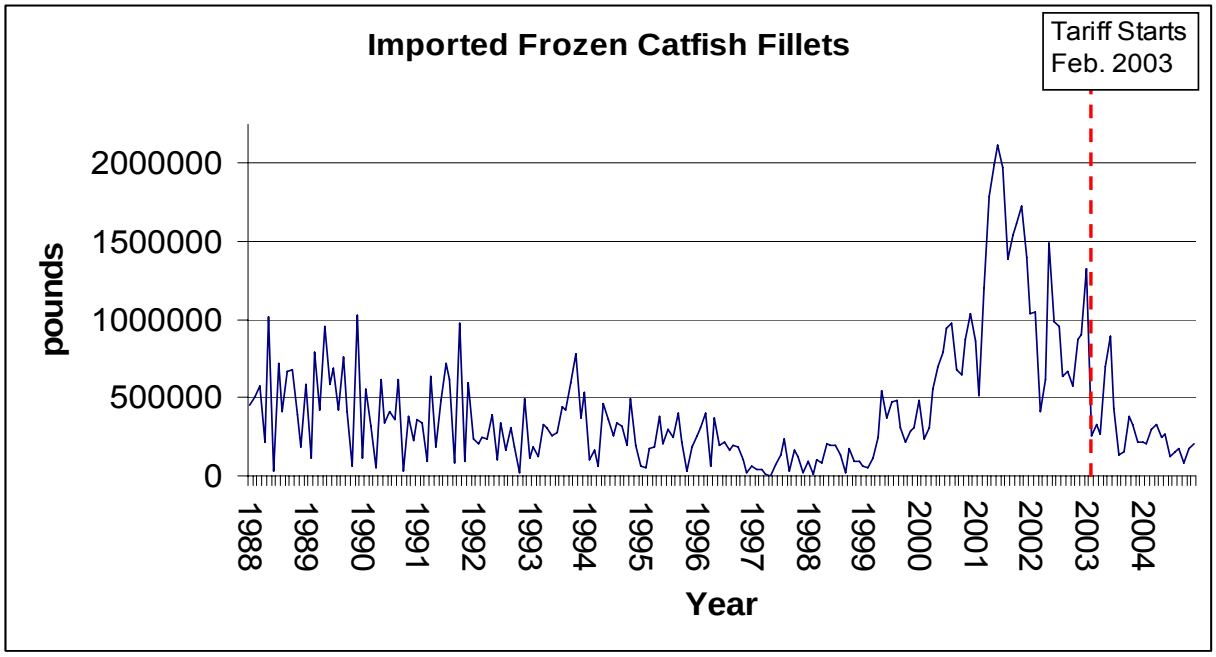

Figure 2 Monthly Changes in the Budget Share of American Produced Frozen Catfish Fillets Directly Caused by Imports