Thailand’s Processed Food Industry

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Lecture 15

Outline

- Trade Performance
- Export competitiveness
- Processed chicken
- Frozen shrimp
- SPS measures and impacts
- Response to NTBs

Trade Performance HS : Exports of meat, fish and seafood food preparations (2013, in USD thousands)

Country	Exports in value	Exports as a share of total exports (%)	Exports as a share of world exports (%)	Growth of exports in value (% p.a.)	Growth of share in world exports (% p.a.)	Number of exported products	Share of top 3 exported products (%)	Share of top 3 export markets (%)
World	48,883,676	100	0.27	9	0	26	41.5	32.5
China	8,982,084	0.41	18.37	18	9	25	51	61.9
Thailand	7,117,995	3.11	14.56	7	-2	26	83.5	55.3
Germany	3,408,683	0.23	6.97	5	-4	26	56.2	39.7
USA	2,226,202	0.14	4.55	10	1	26	55.9	65.9

Trade Performance HS : Exports of meat, fish and seafood food preparations (2013, in USD thousands)

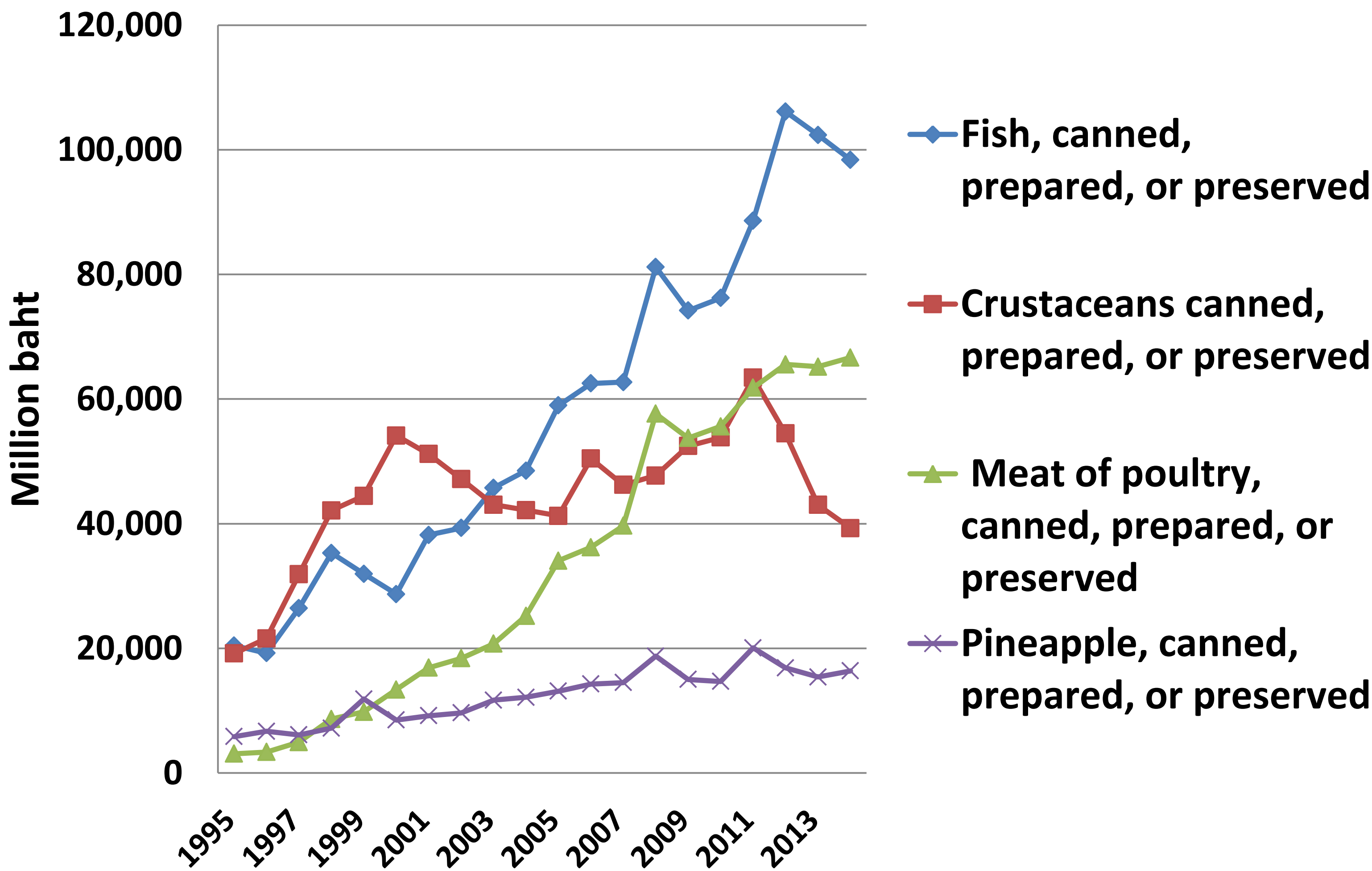
Country	Exports in value	Exports as a share of total exports (%)	Exports as a share of world exports (%)	Growth of exports in value (% p.a.)	Growth of share in world exports (% p.a.)	Number of exported products	Share of top 3 exported products (%)	Share of top 3 export markets (%)	Net trade	Specialisation (Balassa Index / RCA Index)
World	48,883,676	100	0.27	9	0	26	41.5	32.5	2,632,584	
China	8,982,084	0.41	18.37	18	9	25	51	61.9	8,784,817	1.5
Thailand	**7,117,995**	**3.11**	**14.56**	**7**	**-2**	**26**	**83.5**	**55.3**	**6,905,127**	**11.5**
Germany	3,408,683	0.23	6.97	5	-4	26	56.2	39.7	484,014	0.9
USA	2,226,202	0.14	4.55	10	1	26	55.9	65.9	-2,510,241	0.5
Netherlands	1,601,277	0.24	3.28	0	-9	26	56.4	62.2	-132,982	0.9
Brazil	1,532,531	0.63	3.14	-2	-11	17	85.7	56.8	1,409,564	2.3
Spain	1,507,381	0.48	3.08	8	-1	26	71.3	58.5	159,635	1.8
Denmark	1,506,696	1.36	3.08	3	-6	26	50.6	59.9	531,271	5
Ecuador	1,351,912	5.42	2.77	21	12	10	97.7	36.8	1,339,061	20.1
Viet Nam	1,329,899	0.96	2.72	20	11	21	81.9	63.1	1,219,653	3.6
Poland	1,235,341	0.62	2.53	12	3	25	42.9	53.8	944,250	2.3
Belgium	1,205,849	0.24	2.47	4	-5	26	42	67.2	-131,338	0.9
Italy	1,100,520	0.21	2.25	7	-2	26	69.9	43.1	-673,701	0.8
France	1,097,941	0.19	2.25	1	-8	26	49.9	50.1	-1,238,822	0.7

Trade Performance HS : Exports of Thailand - 16 Meat, fish and seafood food preparations (2013, in USD thousands)

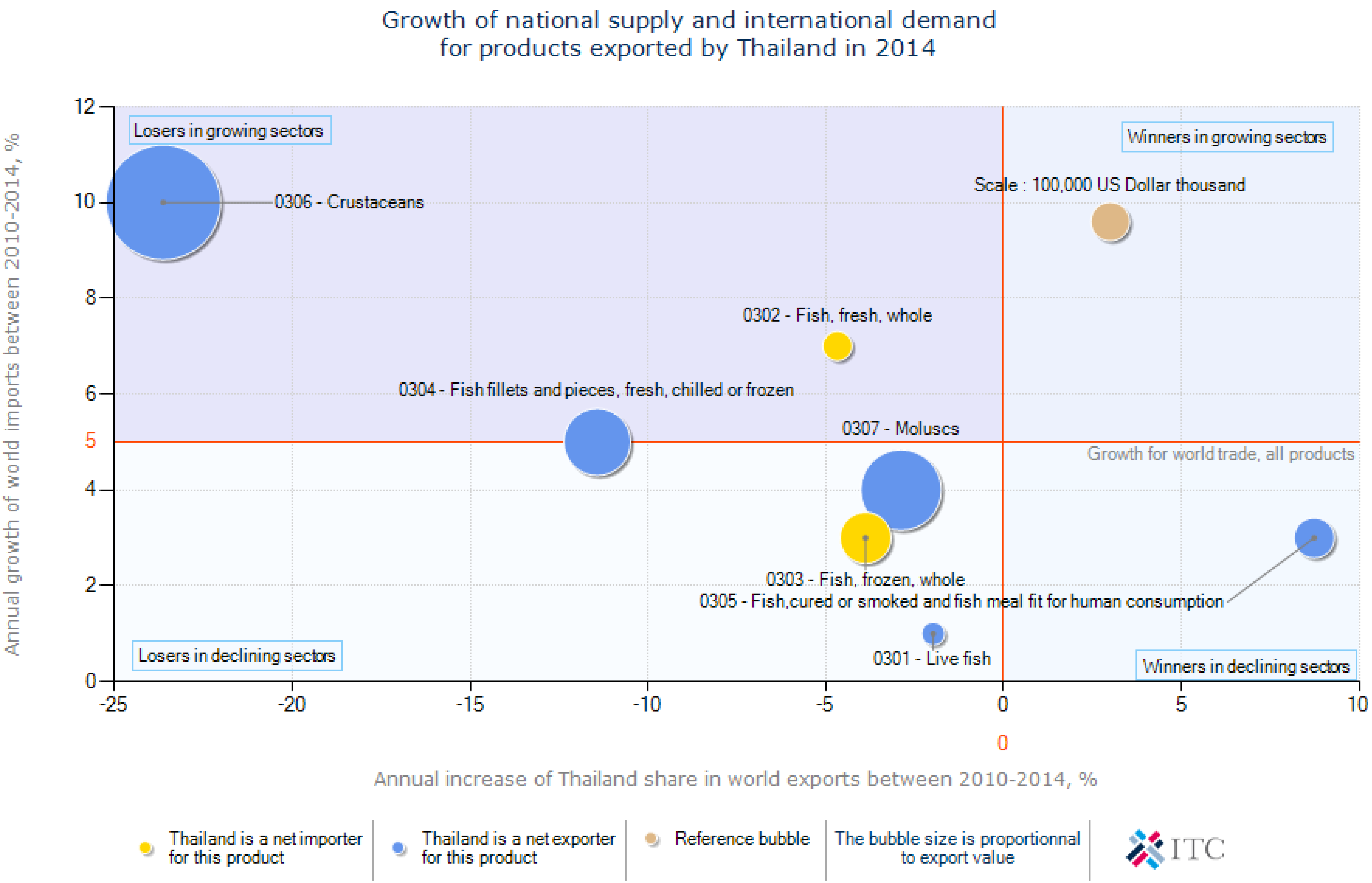
Major importing countries from Thailand

Leading partners	Exports in value	Exports as a share of total exports (%)	Exports as a share of world exports (%)	Growth of exports in value (% p.a.)	Growth of exports in volume (% p.a.)	Number of exported products	Share of top 3 exported products (%)
World	**7,117,995**	**3.11**	**14.56**	**7**	**1**	**26**	**83.5**
Japan	**1,997,238**	**28.06**	**4.09**	**10**	**6**	**24**	**80.7**
USA	**1,180,159**	**16.58**	**2.41**	**-2**	**-9**	**15**	**92**
UK	**756,520**	**10.63**	**1.55**	**6**	**-2**	**13**	**92.8**
Australia	**330,767**	**4.65**	**0.68**	**12**	**4**	**18**	**89.2**
Canada	**257,288**	**3.61**	**0.53**	**5**	**-2**	**14**	**91.8**

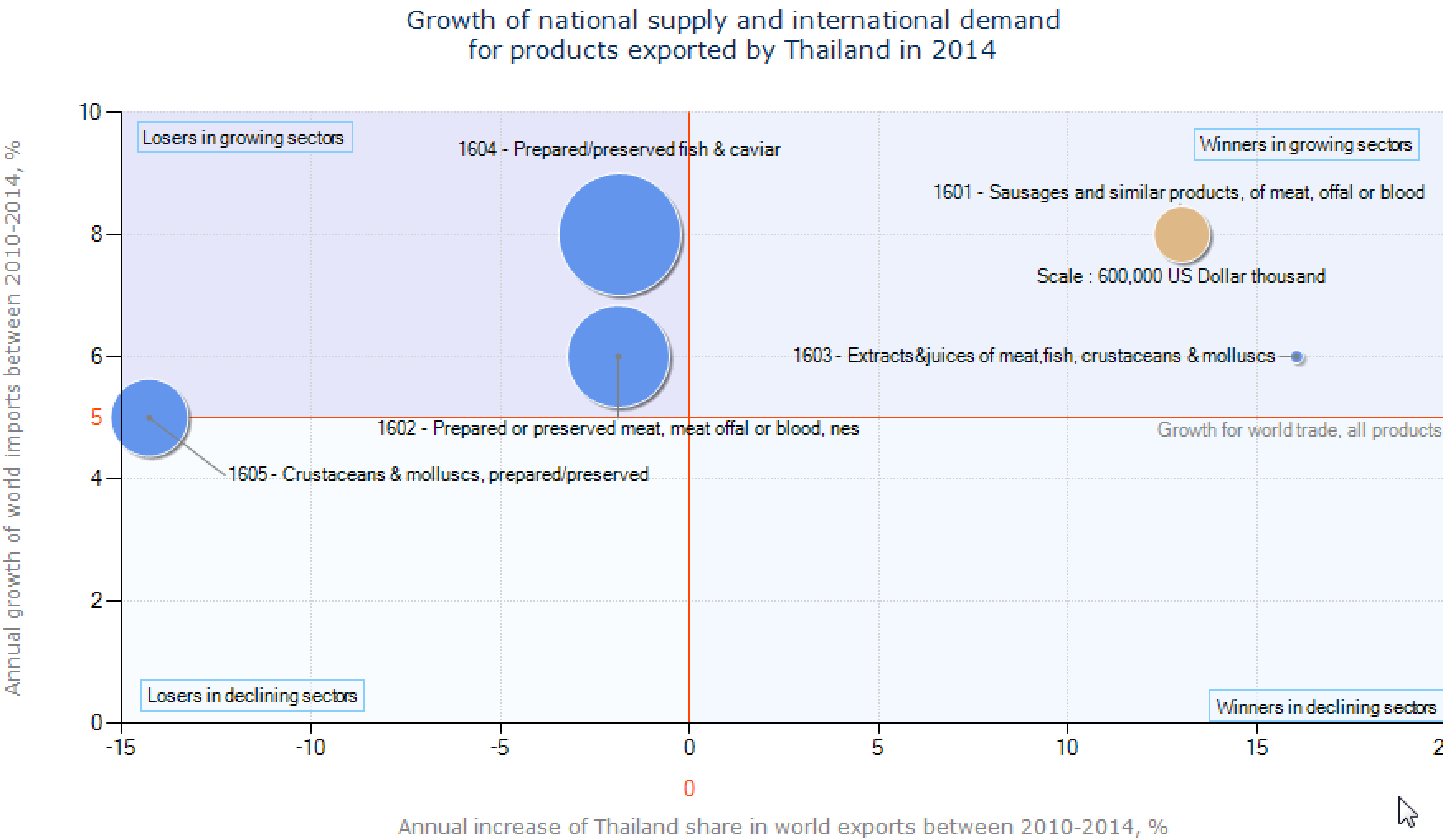
Thailand's major processed food exports 1995-2014



Product 03


Growth of national supply and international demand
for products exported by Thailand in 2014
Losers in growing sectors
Winners in growing sectors
Scale : 100,000 US Dollar thousand
0306 - Crustaceans
0302 - Fish, fresh, whole
0304 - Fish fillets and pieces, fresh, chilled or frozen
0307 - Moluscs
Growth for world trade, all products
0303 - Fish, frozen, whole
0305 - Fish,cured or smoked and fish meal fit for human consumption
Losers in declining sectors
0301 - Live fish
Winners in declining sectors
12
10
8
6
5
4
2
0
-25
-20
-15
-10
-5
0
5
10
0
Annual growth of world imports between 2010-2014, %
Annual increase of Thailand share in world exports between 2010-2014, %
Thailand is a net importer for this product
Thailand is a net exporter for this product
Reference bubble
The bubble size is proportionnal to export value
ITC

Product 16: Lost opportunities

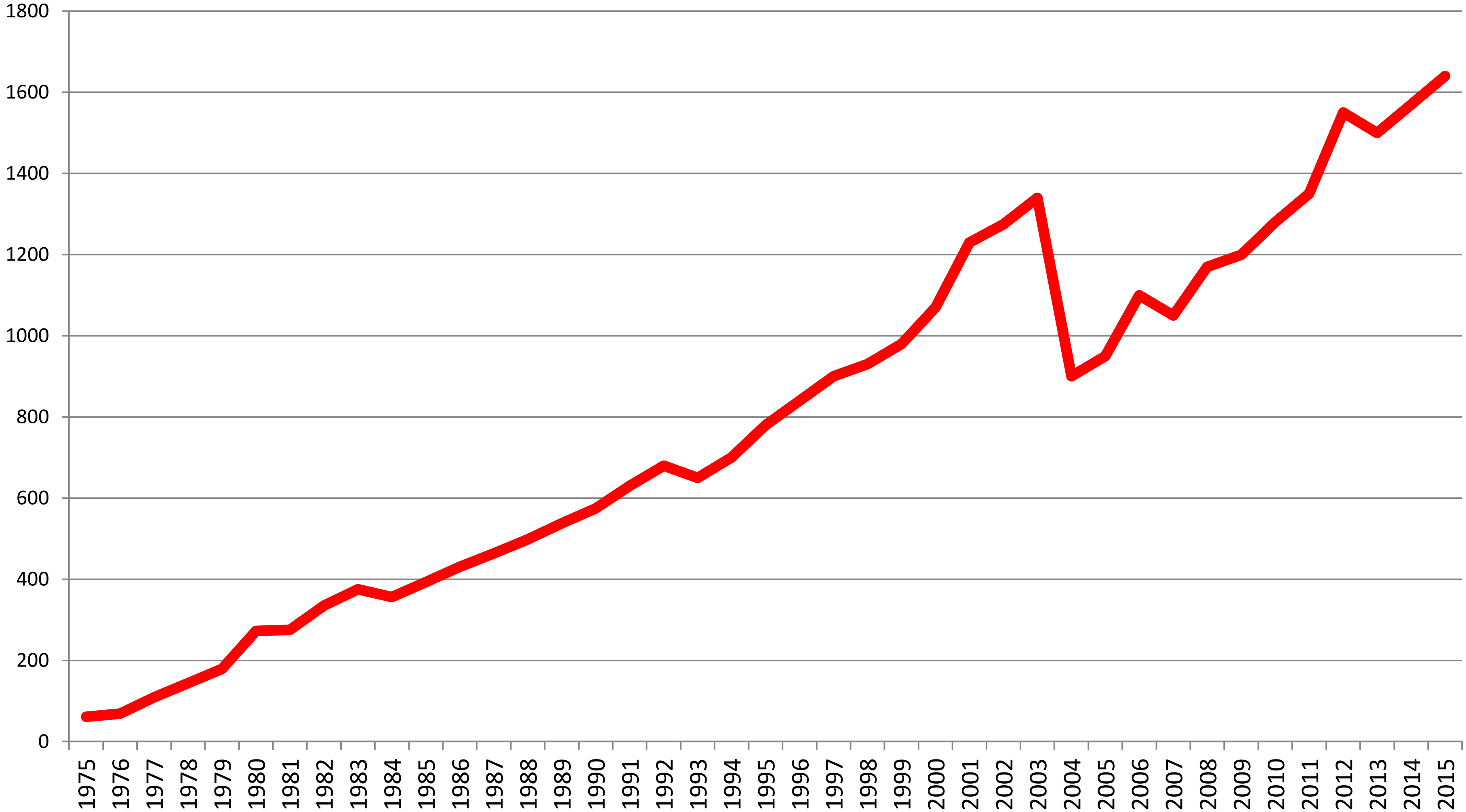


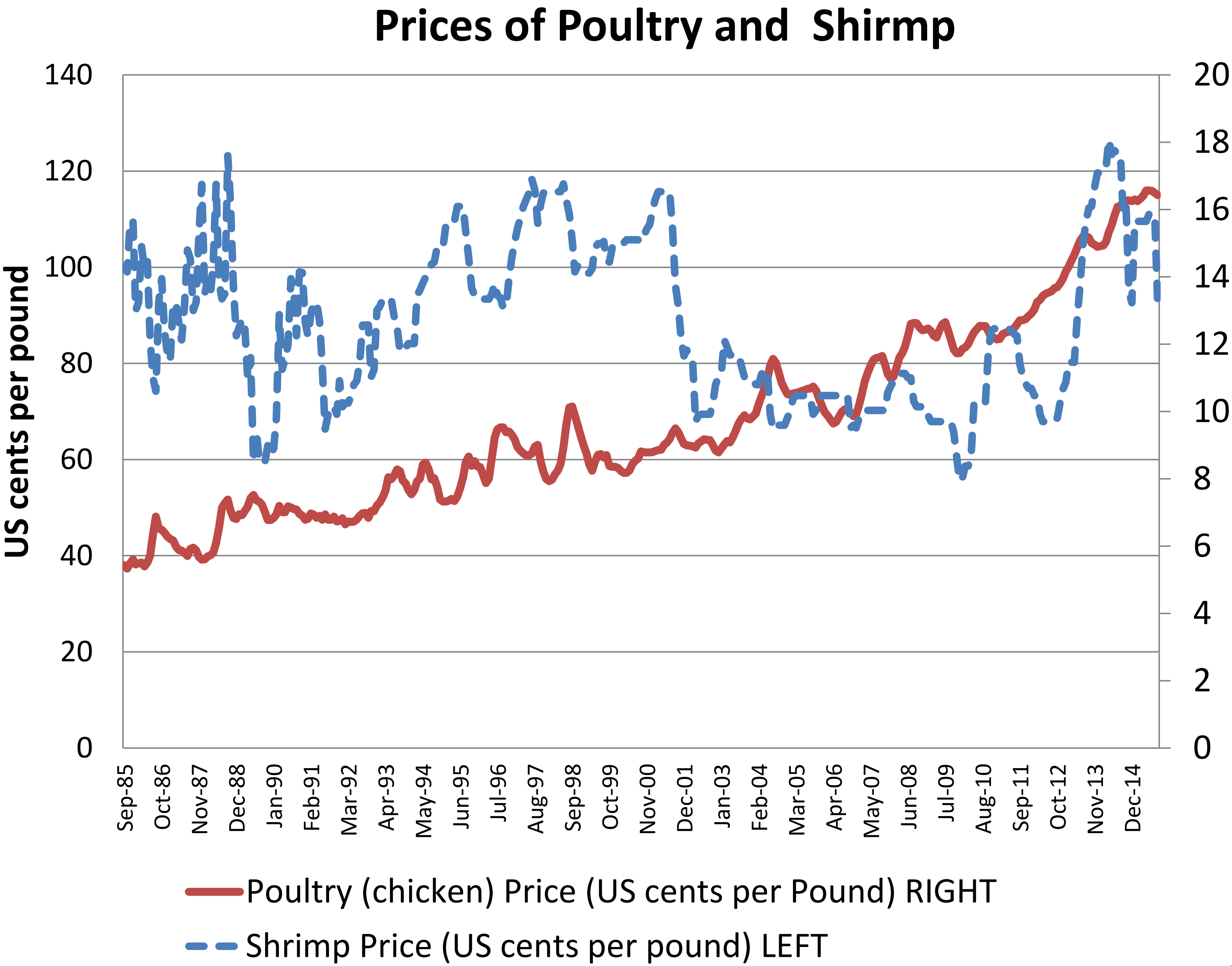
Thailand's Processed Food Industry: 2013

	Value	Rank (169)
Value of exports (in thousand US$)	19,468,004	
Export growth in value, p.a. (%)	11%	74
Share in national exports (%)	8%	
Share in national imports (%)	2%	
Relative trade balance (%)	47%	
Relative unit value (world average = 1)	1.2	
Net exports (in thousand US$)	12,451,951	7
Per capita exports US$/inhabitant)	285.5	47
Share in world market (%)	2.57%	14
Product diversification (N° of equivalent products)	18	35
Market diversification (N° of equivalent markets)	16	14

Thailand Broilier Production

(1,000 MT)





Prices of Poultry and Shirmp
US cents per pound
140
120
100
80
60
40
20
0
20
18
16
14
12
10
8
6
4
2
0
Sep-85
Oct-86
Nov-87
Dec-88
Jan-90
Feb-91
Mar-92
Apr-93
May-94
Jun-95
Jul-96
Aug-97
Sep-98
Oct-99
Nov-00
Dec-01
Jan-03
Feb-04
Mar-05
Apr-06
May-07
Jun-08
Jul-09
Aug-10
Sep-11
Oct-12
Nov-13
Dec-14
Poultry (chicken) Price (US cents per Pound) RIGHT
Shrimp Price (US cents per pound) LEFT

Benefits from processed food industry

- Less reliance on imported raw materials: high value added.
- Low capital intensity: creating more jobs
- Close links with the agricultural sector
- Output and exports reflect changing comparative advantage.
- Wider scope for ***product differentiation*** than traditional agricultural commodities.

Major processed food exports

- Processed seafood: canned tuna, fresh and frozen shrimp
- Processed meat: chicken, pork
- Processed vegetable and fruit: canned pineapple

Thailand's multibillion-dollar seafood industry plagued by pirates and slaves on high seas

- Overfishing and the use of ***illegal and undocumented*** trawlers has ravaged Thailand's marine ecosystems and even encouraged the use of slave labor in the industry
- Thai fishing boats are now catching about 85 percent less than what they brought in 50 years ago, making it one of the most overfished regions on the planet.

Migrant workers

- Depleted fisheries in the Gulf of Thailand and Andaman Sea have, in turn, pushed Thai fishing boats farther and farther from home (Indonesia).
- Fewer Thais are willing to take on the dangerous, low-level work, so fishing operations use brokers and agents to enlist migrant workers from impoverished neighboring countries such as Myanmar and Cambodia, often through trickery and kidnapping.

The case of canned pineapple

- Output of processed food industry is driven by demand for its exports.
- The decline in the production of canned pineapple industry from 1995 to 1998 can be attributed to unfavorable external demand.
- Because the industry has very low profit margin, changes in the cost of raw materials, exchange rates, GSP, and anti-dumping duties adversely affect the industry.

Market structure of canned pineapple

- Demand conditions can become unfavorable to the industry because of changes in consumer preference.
- Canned pineapple exports fluctuates widely over the year, more than canned tuna and other canned fruit.
- Thai pineapple has a unique business operation based upon price competition and relatively free entry and exit.

More challenges

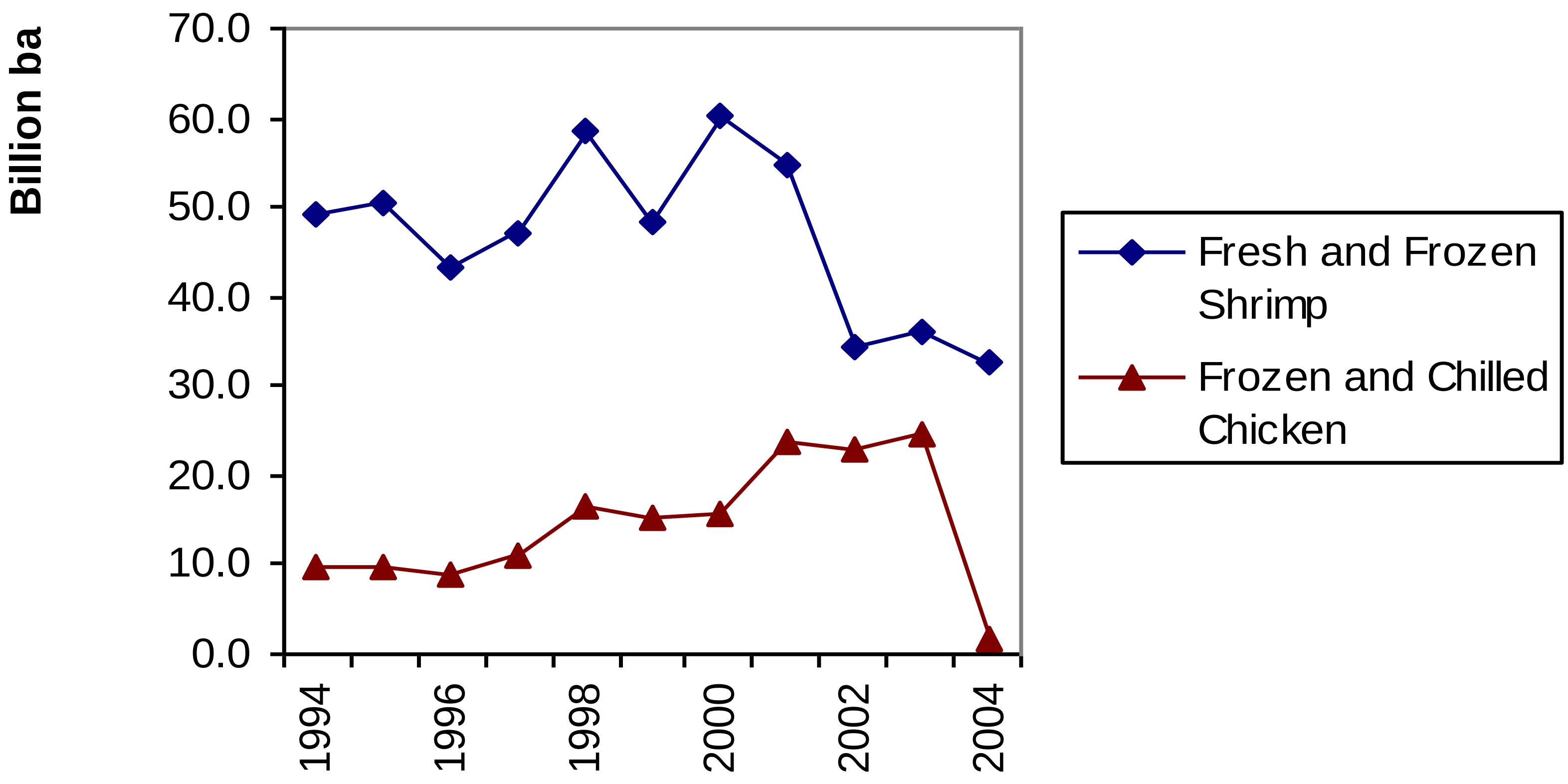
- There are also problems with labor shortage as other industries also compete for labor.
- Coping with rising wages, energy prices, and currency appreciation would be a challenge to these mature food processing industries in Thailand.
- The withdrawals of General System of Preferences (GSP)

An early warning indicator

- The year 2001 witnessed the gain in Thailand's market share of chicken exports to the EU, reaching above **35** percent in the total imports in the EU, at the expense of the US.
- The ***rising market share*** is an early warning that the chicken industry will be subject to new barriers.
- *Nitrofuran* detection was responsible for the decline of the Thai market share in **2002.**
- The Avian Influenza that triggered the ban on Thai chicken further depressed the share of Thai chicken in **2004.**

Chilled and frozen shrimp and chicken

Figure 15: Impacts of GSP Withdrawls (1999) Nitrofurans (2002) and Avian Infulenza (2004)



Source: Office of Agricultural Economics
Department of Fisheries

Further processed chicken

- There was a sharp fall in exports of chilled and frozen chicken because of the ban on Thai chicken after the outbreak of Avian Influenza in 2004
- Since it is safe to consume cooked chicken, Thai exporters began exporting boiled chicken and further processed chicken meat to compensate the fall in exports of frozen chicken.
- In 2004, Thailand exported heat-treated chicken worth 20 billion baht, half of which went to Japan, followed by the EU.

Responses to non-tariff barriers

- **Thai food processing firms have to adjust in the new technical trade barriers:**
- **Move from *chilled and frozen* to cooked chicken and further chicken**
- **Adopt a closed farming system (as opposed to free-range farming)**
- **Invest directly in importing countries (CP Chilled chicken plants in UK)**
- **Kaew Kung (frozen shrimp soup) 59 baht per cup) are produced in a billion-baht factory close to shrimp farms near Trad province.**

Sanitary and Phytosanitary Standard (SPS)

SPS can be used as powerful tools to impede international trade and *protect* domestic producers through unjustified different requirements in different markets, unnecessary costly or time consuming tests, or duplicative conformity assessment procedures.

The case of the EU

- The European Commission has set clear guidelines for producers and exporters to improve the healthiness of food for EU consumers.
- Among the measures is voluntary "traffic labeling", which deems products either green, yellow or red, depending on the risk of causing obesity.
- Labeling requirements: nutritious values

Pathogenic substance

- The EU also has strengthened its food-safety measures dealing with pathogenic micro-organisms that could harm consumers.
- The list of chemical residues from **pesticides** would be revised with tougher inspections to head off diseases.
- Stringent checks on imported meat, fruit and vegetables are carried as a part of risk assessment procedure.
- Is it safe to eat horse (dog) meat?

Traceability (From farms to fork)

- Most Thai exporters had co-operated well with previous EU requirements, including a 2005 traceability system for feed and food.
- “The EU have found the Thai record was not too bad but not perfect,“
- Based on 2006 statistics, there were 86 cases of Thai food imports with problems including *nitrofurans* in freshwater shrimp and *pesticides* in fresh vegetables.

On pesticides

- The sharp increase in pesticide use by Thai farmers has alarmed international markets.
- Department of Agriculture: We needed to impose a complete ban on four hazardous chemicals still used in Thailand but not in any developed country.
- The country's record of pesticide use was worrying.

Thais love chemicals

- Food and Agriculture Organization figures for 2007 show Thailand had 27,126 agricultural chemical brands registered for use - more than China (20,000), Vietnam (1,743), Indonesia (1,158), Malaysia (917), Burma (818) and Laos (100) combined.
- Thailand is consuming a massive amount of chemicals,
- Thai farmers still use agricultural chemicals that have been banned in many countries: carbofuran, dicrotophos, methyl and EPN

Imported veggies from Thailand: more inspection

- The EU recently found prohibited chemicals in imported vegetables including basil, chili, Chinese bitter cucumber and bean.
- Fears of a possible EU ban on Thai vegetables has prompted the government to order a temporary suspension of shipments.
- We were warned about chemical-contaminated vegetables 26 times in 2009 and up to 55 times in 2010.
- The Agriculture Ministry planed to suspend the export of 16 vegetables to the EU, including basil, *aubergines* and chilies

Food-borne diseases

- Two food-borne zoonoses, salmonella and campylobacter, which are a major concern in the UK and worldwide.
- Zoonosis is defined as a disease that we get from animals.
- About 60% of all infections are zoonoses - SARS, avian flu, campylobacter, salmonella;
- We catch them all from animals, either directly or indirectly from food.

Beware of Salmonella

- People infected with salmonella and campylobacter may suffer from abdominal pain and diarrhea.
- Salmonella is found in both chicken meat and eggs while campylobacter is found in chickens.

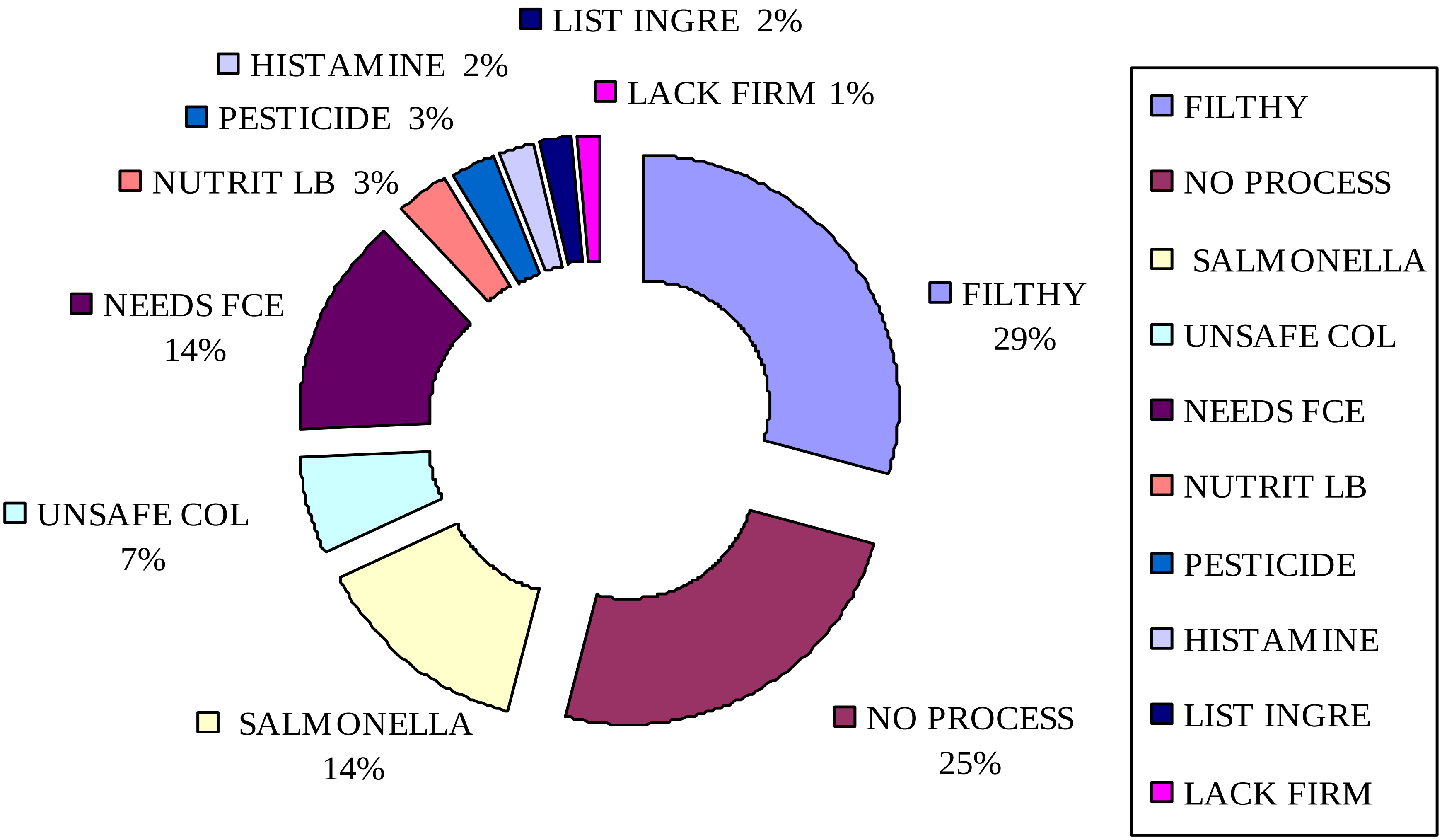
Food safety in the early 1990s

- In Thailand, there are no complete statistics on the epidemiology of the diseases, but studies between 1990 and 1993 found a continuing increase in the number of patients infected with salmonella, rising from 1.33% to 16.98% within a four-year period.
- During the same period, the presence of salmonella bacteria in raw chicken meat was found to have increased dramatically from 1.4% in 1990 to 16.75% in 1993.

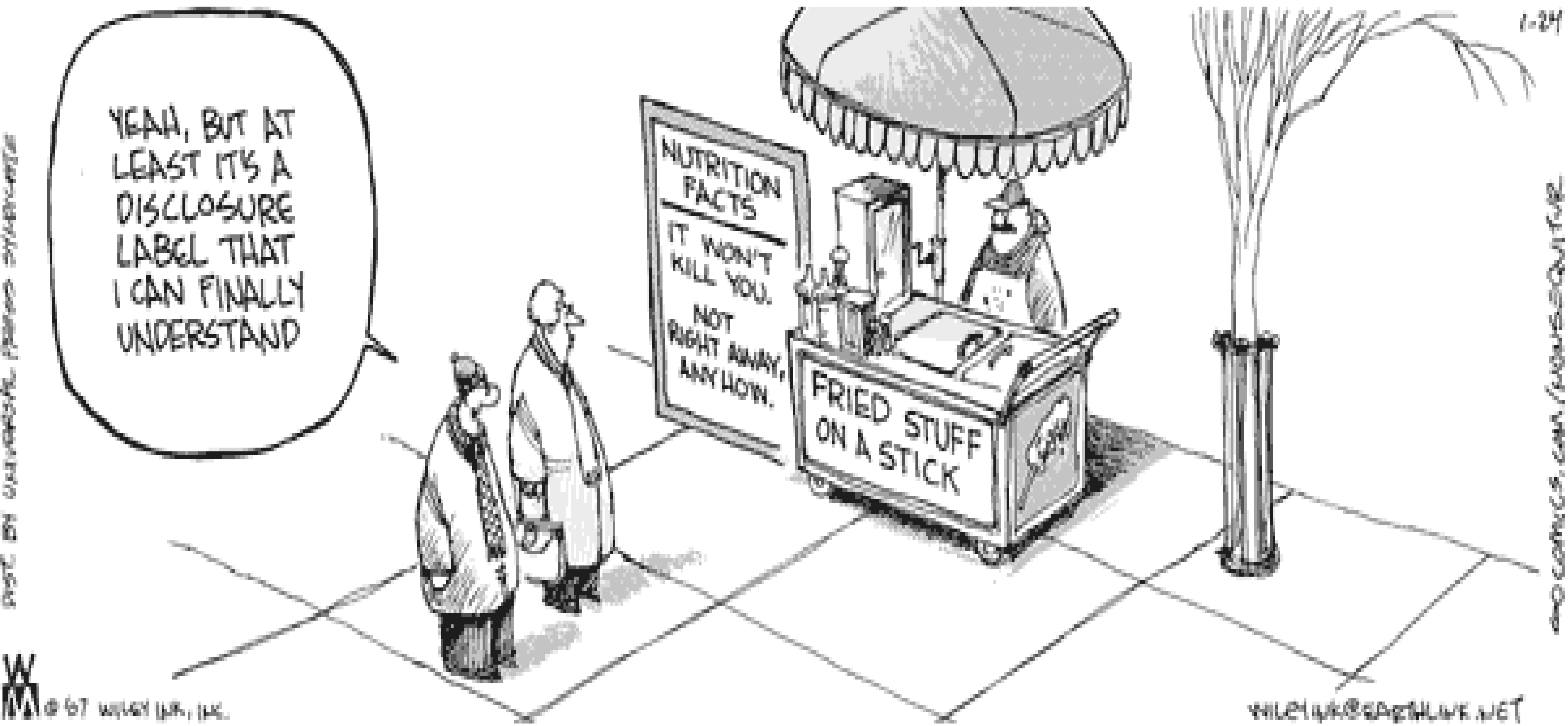
Quality improvement

- Major causes of Thailand's exports detention by USFDA are related to quality and safety of the products: unsafe coloring, fifty, salmonella.
- Some are not difficult to deal with: nutrition labeling, specification of production process, listing of ingredients, factory certificates.

USFDA Detention of Thai food products in 2004



Read the label first



A wake-up call: Rising Awareness of Food Safety Standards

2002: Declining exports of chicken and shrimp to the EU

2004: (1) Outbreak of Avian Influenza

(2) Massive culling of chickens

(3) Reduction in domestic consumption of chicken

Thailand’s responses to shocks

- National Bureau of Agricultural Commodity and Food Standards (ACFS) was established in 2002 to supervise and control food chain from farms to consumers.
- ACFS established **national standards** for swine, poultry and daily farms.

Thailand's responses to shocks

- ACFS inspection activity is conducted from hatchery to final markets at home and aboard.
- Good agricultural Practice (GAP) involves the upstream activities at hatchery and farm levels.
- The Good Manufacturing Practice (GMP) and HACCP (Hazard Analysis at Critical Control Points) are issued to qualified firms at the harvesting and processing plants.

Technical trade barriers

- The Australian food safety regulations exemplify in trade-impeding effects of technical barriers.
- Chicken meat imported into Australia must be heated at **70 Celsius for 143** minutes to assure disease-free meat.
- Neither Thailand nor any other country has ever penetrated the Australian chicken market.

At the Downunder

- Some Thai companies jokingly suggested the Thai government retaliate by requiring the same kind of heat treatment (**70 Celsius)** on imported wine and chocolates from Australia.
- The basic argument is that food products that are subjected to heat treatment would change their nature and appearance after meeting the most stringent food safety regulations.
- Thus unnecessarily high food safety standards can lead to zero volume of exports.

Technical trade barriers

- Food safety standard became a thorny issue during the negotiation of free trade agreement between Thailand and Australia.
- The Thai firms argued that they had a lot to lose because the aberration of food safety standards was still maintained after the removal of tariff barriers.

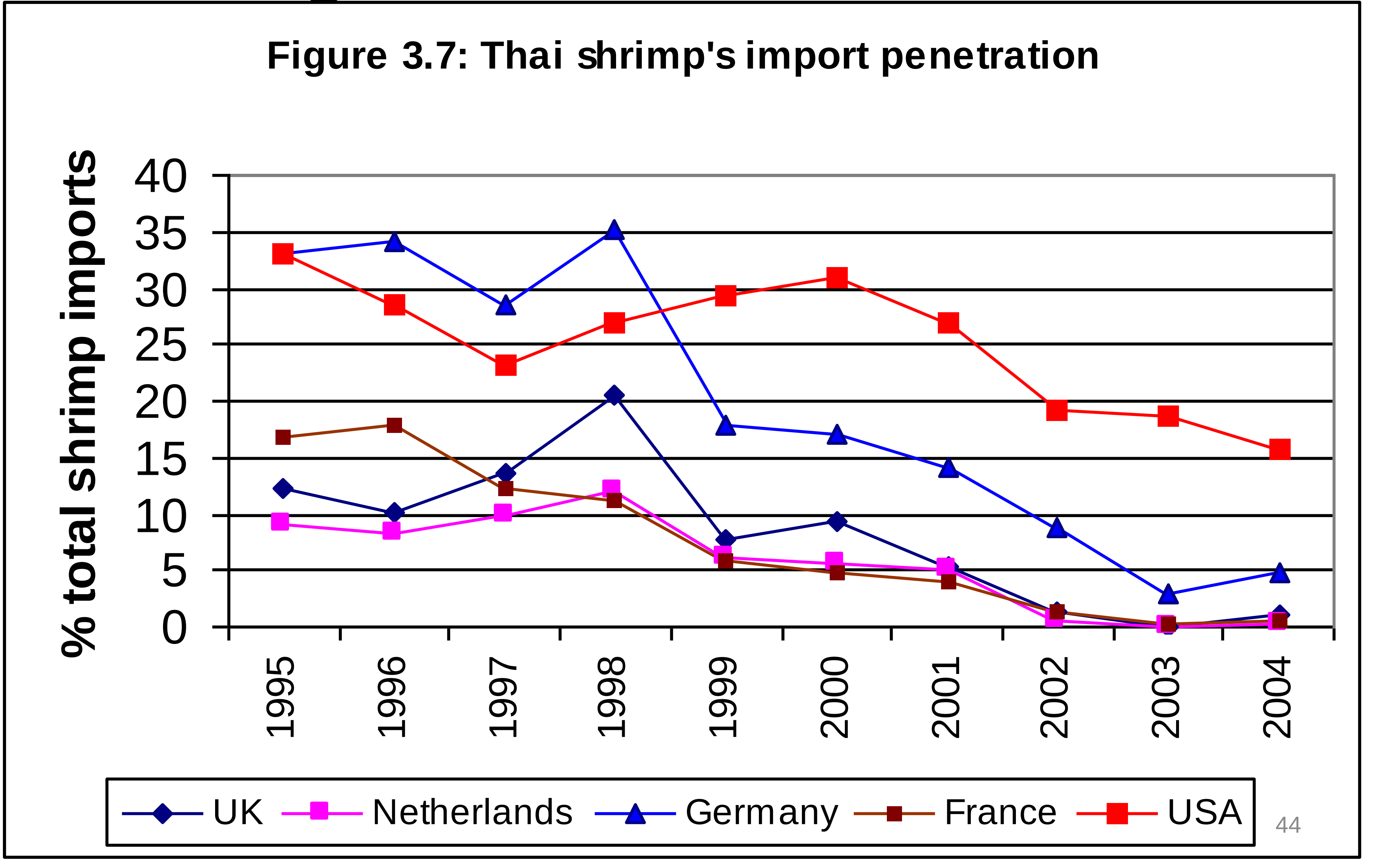
Exports of Thai shrimp

- ***Nitrofuran*** is a veterinary drug used in food-producing industries, but it is banned in many countries because of a link to cancer in humans.
- The EU first employed costly new laboratory equipment--LCMS/MS--in March 2002.
- The machine found nitrofuran residues in both Brazilian and Thai chickens and black tigers shrimps

Thai shrimp exports

- The new LCSMS/MS instrument is so accurate that it can detect drug residues at ***parts per trillion***.
- While Brazilian exports were subject to only random check, Thai products were subject to a 100 percent testing.
- The cost of the new testing equipment is 15 million baht ($350,000).
- Small firms would not be able to afford this costly imported equipment.

Declining Thailand’s market shares



Reasons for complying with Food Safety Standards

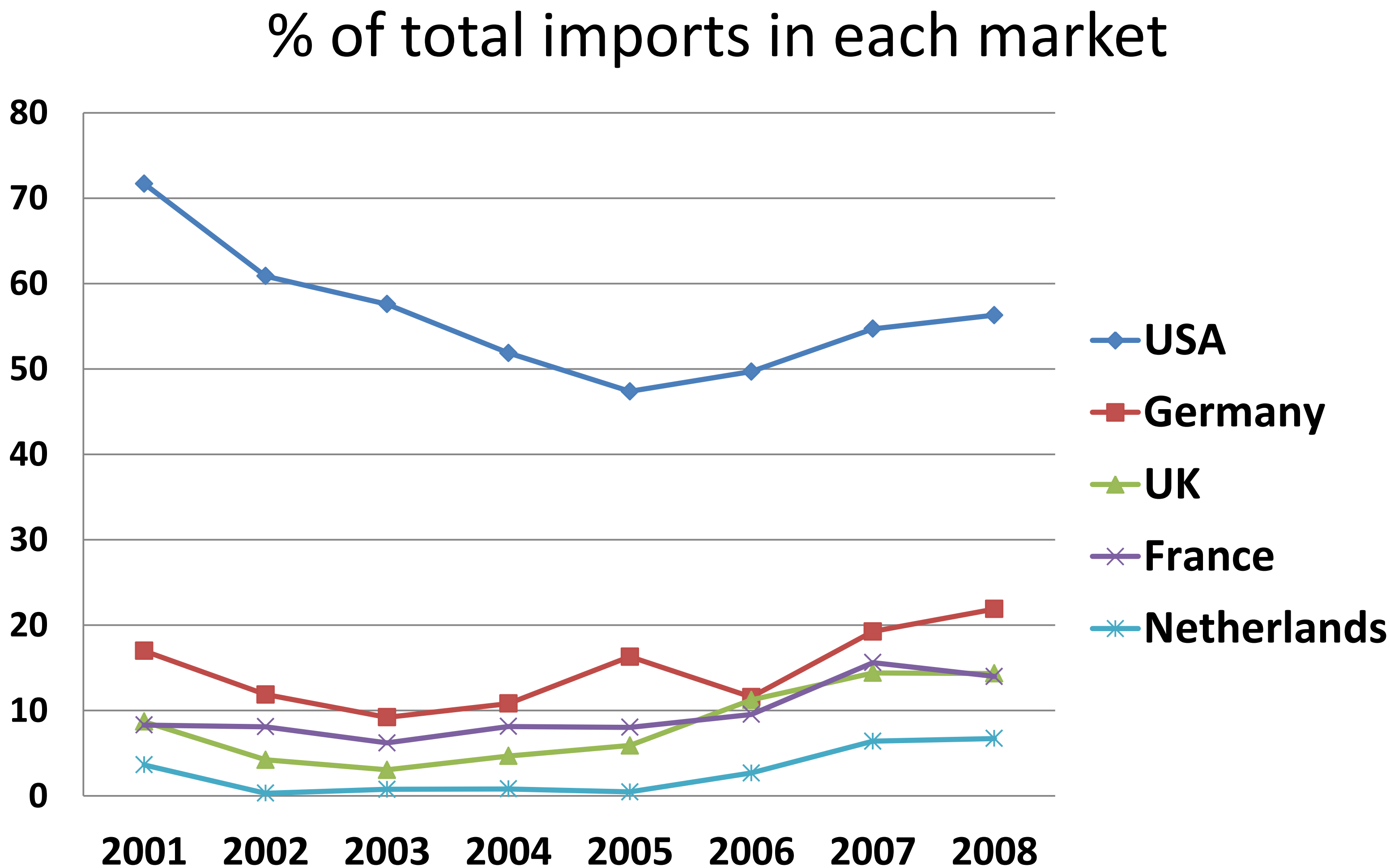
- Satisfy customers’ requirements
- Maintain market access
- To access **new** markets
- Operation efficiency

The way to response to high food safety standard: Friendly shrimp farming

- Switched from black tigers to white shrimp
- Employed pro-biotic farming to create friendly environment for shrimp
- Applied no anti-biotic to improve shrimps' digestion system,
- Reduced stress and increased virus resistance of baby shrimps (less crowded ponds)
- But these measures also incur higher cost to producers
- Proactive investment, anticipating more stringent food safety standards.
- Upgrading laboratory standards

Market penetration of Thai shrimp exports:

A rebound after upgrading food safety standards



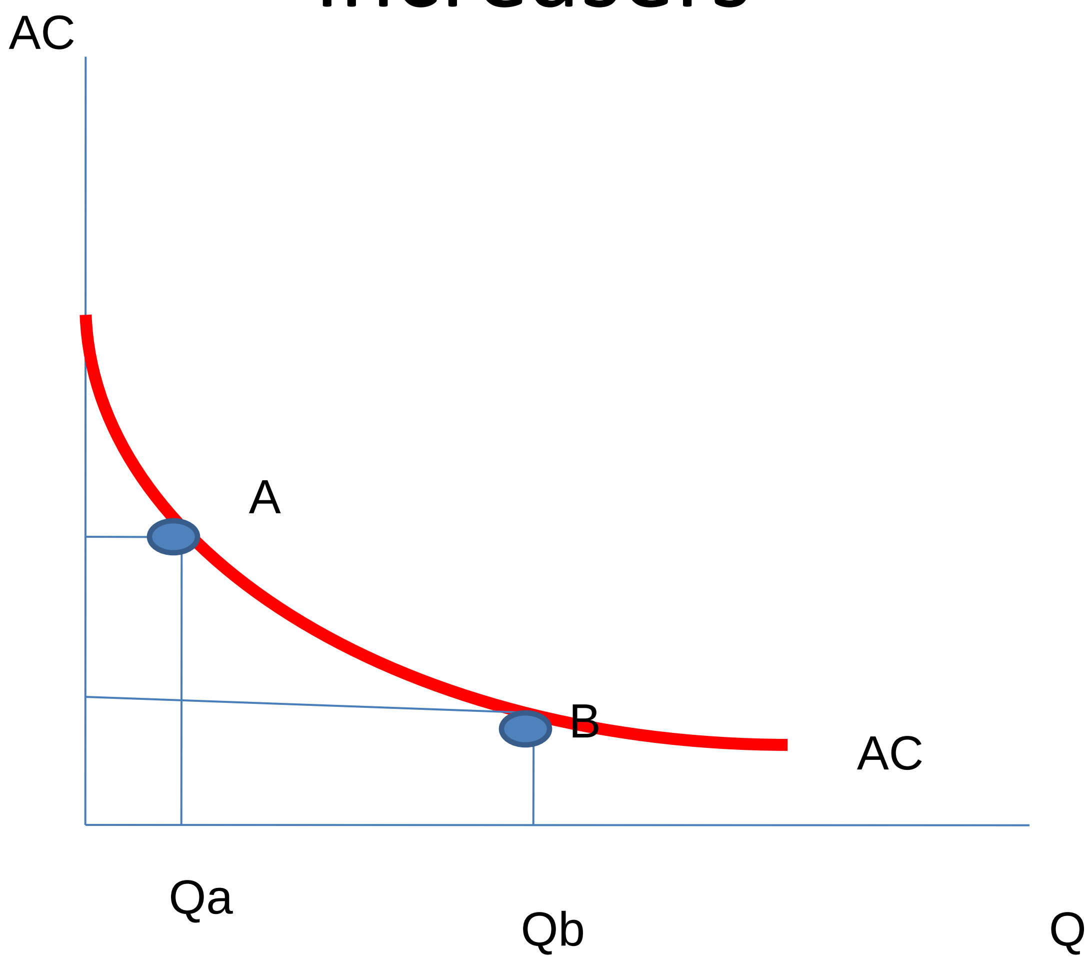
Anti-Dumping Duty (ADD)

- Rising market shares can be thought of as an early warning indicator of incoming trade barriers, either in the form of anti-dumping duties (USA, 2004) or Non-Tariff Barriers (NTB- the case of EU).
- There were other countries that are subjected to these anti-dumping duties: Vietnam, India, Indonesia, and China

Size matters

- **Large firms take advantage over smaller firms in the ability to comply with international food safety standards, because of lower average compliance cost.**
- **Large firms have their own brands, which they must protect their reputation.**
- **Large firms are more likely to form strategic partners.**
- **More chances to be a member of exporters' associations**

Size matters in SPS compliance: Average cost declines as production increasers



Disadvantages of small firms

- **Incur higher adjustment cost.**
- **Require government assistance in providing information of food safety standards**
- **Need subsidies on lab tests.**
- **Difficult to establish strategic partners.**

  A joint venture with importers is crucial if exporting firms want to gain access to developed countries, whose governments require plant inspection as a necessary condition for market access.

Structural changes

- Large firms integrate vertically from feed to processed products: pork and chicken
- Some industry such as canned pineapple and shrimp depend on outsourcing of raw materials.
- Shrimp industry faces higher cost of screening input.

Don’t delay quality and safety improvement

- The sooner firms achieve stringent food safety standards, the greater their ability to compete in the world market.
- Abuses of SPS standards are more frequent in those markets where there are substantial domestic subsidies.

Product differentiation

- SPS standards imposed by importing countries would reduce domestic price level of the affected products.
- Export market shares depend partly on firms' accumulated investment to comply with food safety standard norms.

Compliance cost as investment expenditure

- Firm's initial investment to comply with SPS measures would pay off in the long run.
- Investment in upgrading food safety standard is related to **export performance** of the firms, specific industry, and the country that is aware of food safety standards.
- **Indirect subsidies** through public spending on raising food safety concerns by government can reduce short-term adjustment costs.

Examples of industry responses to SPS measures

- Substitution of soybean (GMO) by sunflower oil in canned tuna production
- Established strategic partnerships in importing countries (CP and Queensland in fruit exports, Betrago and Sumitomo in exports of pork to Japan).
- Integrated vertically (pig meat industry) and SPF (specific pathogen-free) pork.

Functions of Exporters Associations

- **To prevent negative externality, export firms must be a member of an exporter association.**
- **Providing vital information to government and exporters to reduce information cost.**

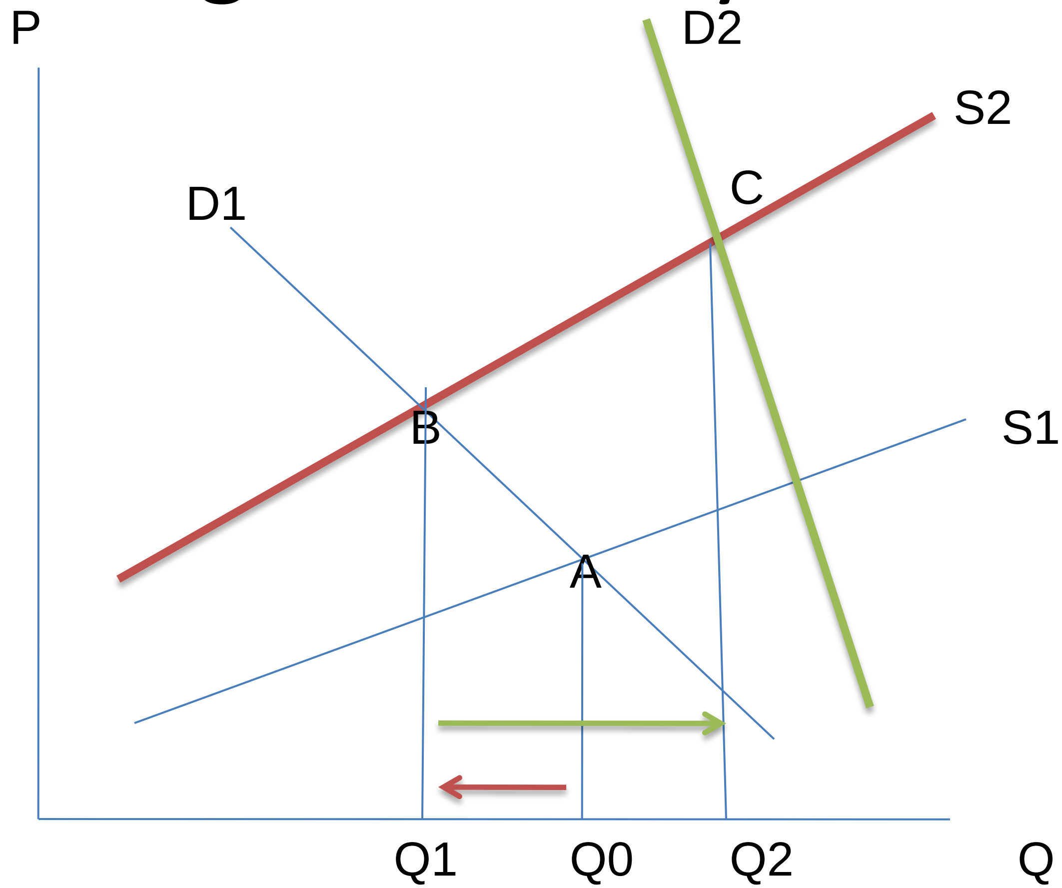
Roles of Exporters Associations

- **Screening and monitoring moral hazard among members.**
- **Resource pooling and cost sharing in dealing with food safety standard issues to reduce compliance cost.**

The way forward

- The processed food industry is subject to a constant shock syndrome.
- Tariff and non-tariff barriers are substituted in importing countries.
- Structural change: more concentration of the industry, because size matters for market access and competitiveness.

Impact of long-term investment in upgrading food safety standard



Conclusion

- The concern for food safety increases with rising per capita income.
- *The higher the level of market penetration in importing countries, the higher the technical barriers*.

Profile of Thailand's Outward investment

Industry	Thailand's Foreign Direct Investment Outflows			
	Outflow 2011	Outward stock 2012	Chg. p.a. since 2010	No of Affiliates Abroad
Total	10,624.50	56,144.30	54.30%	184
Finance	3,368.90	8,483.00	76.00%	7
Mining and quarrying	2,464.00	13,722.80	34.20%	11
Wholesale and retail trade	983.4	4,581.00	38.00%	39
Chemical products	670.4	1,835.50	29.80%	10
Electrical and electronic equipment	597.4	2,809.90	63.30%	25
Food,beverages	321.3	4,848.70	55.90%	11
Construction	203.4	352.7	8.50%	16
Electricity, gas and water	112.6	19.9	-82.50%	3
Hotels and restaurants	93.6	168.3	-14.80%	2
Machinery equipment	86.2	1,531.70	26.40%	12
Transport Communication	10.4	364.4	-38.00%	17

Conclusion

- Dynamism of the processed food industry is required to maintain the market share.
- The sector must continuously invest in upgrading both safety and quality standards.

Challenges in 2016

- Falling prices may squeeze the profitability and cash flows of sugar companies in 2016.
- Meanwhile, the shrimp industry is now facing investigation by the European Union for illegal, unregulated fishing, higher tariffs for exports to the EU, and low prices resulting from more production in many exporting countries.