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# **FOOD SAFETY INCIDENTS, COLLATERAL DAMAGE AND TRADE POLICY RESPONSES: CHINA-CANADA AGRI-FOOD TRADE**

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**Abstract**

As markets become globalized, food safety policy and international trade policy are increasingly intertwined. Globalization also means that food safety incidents are widely reported internationally. One result is that food safety incidents can negatively impact products where no food safety issue exists as consumers lose trust in both foreign and domestic food safety institutions. While the policy framework for dealing with directly effected imported foods is well understood, how to deal with the market failure associated with indirectly affected products within the existing trade policy rules has not been explored. Using the example of China's 2007 problems with a spate of products safety incidents, a theoretical framework is developed and the response of both the Chinese and Canadian governments analyzed. A cooperative approach to the issues appears to have a number of advantages and does not contravene trade policy commitments.

**Key words:** Canada, China, cooperation, food safety, market failure, trade policy

## 1.0 Introduction

In 2007, a series of product safety incidents involving food, toys and other products exported from China garnered considerable international attention and have led to rising levels of concern among consumers in importing countries. Early in the year there were reports of dozens of deaths in Panama after people consumed cold medicines containing diethylene glycol, improperly labelled as glycerine, from China. Then, in the following weeks a number of incidents followed in quick succession: that pet food from China laced with melamine, a coal derivative, had poisoned and even led to the death of pets across North America; that toy trains manufactured in China painted with lead-based paints had been discovered; that lethal antibiotics from China were being sold and; that substandard Chinese tires prone to bursting were widely available. A number of product recalls in North America, Europe and South Africa followed in response to reports of stepped-up monitoring. The incidents received extensive attention from the media leading to further western media investigations examining safety issues in the Chinese domestic market and considerable editorializing which suggested a range of policy responses from increased border inspections to outright import bans on products from China. Consumer trust for products in a number of important export markets for China was clearly declining.

The *Made-in-China* label was seriously tarnished due to this series of product safety scandals. In the face of the rising storm of complaints from around the world, and anxious to defend the international reputation of China as a global supplier, the Chinese government treated the problem seriously and attempted to put in place effective measures to ensure the safety of food and the general reliability of Chinese products.

In Canada, a series of recalls of imported Chinese products took place and product safety investigations were initiated for range of other products, including pet food, toothpaste and children's toys. In June, 2007, Health Canada warned consumers against using certain brands of toothpaste imported from China that

were found to contain diethylene glycol, a chemical used in antifreeze. More than 18 million toys manufactured in China, marketed under the Mattel brand, were pulled from retail shelves for high lead levels and magnet safety problems. Other recalls over the summer of 2007 involved Thomas the Train products, and children's jewellery and art sets (CBC, 2007a). Subsequently, imports of food products from China have also received considerable media attention in Canada. As in other import markets, consumers' trust of Chinese made products has declined and the Canadian government has been buffeted with demands that it do more to ensure the safety of Canadian consumers. Canada is an important trade partners for China. In 2006, Canada imported roughly 368 million kilograms of food from China (CTC, 2007).

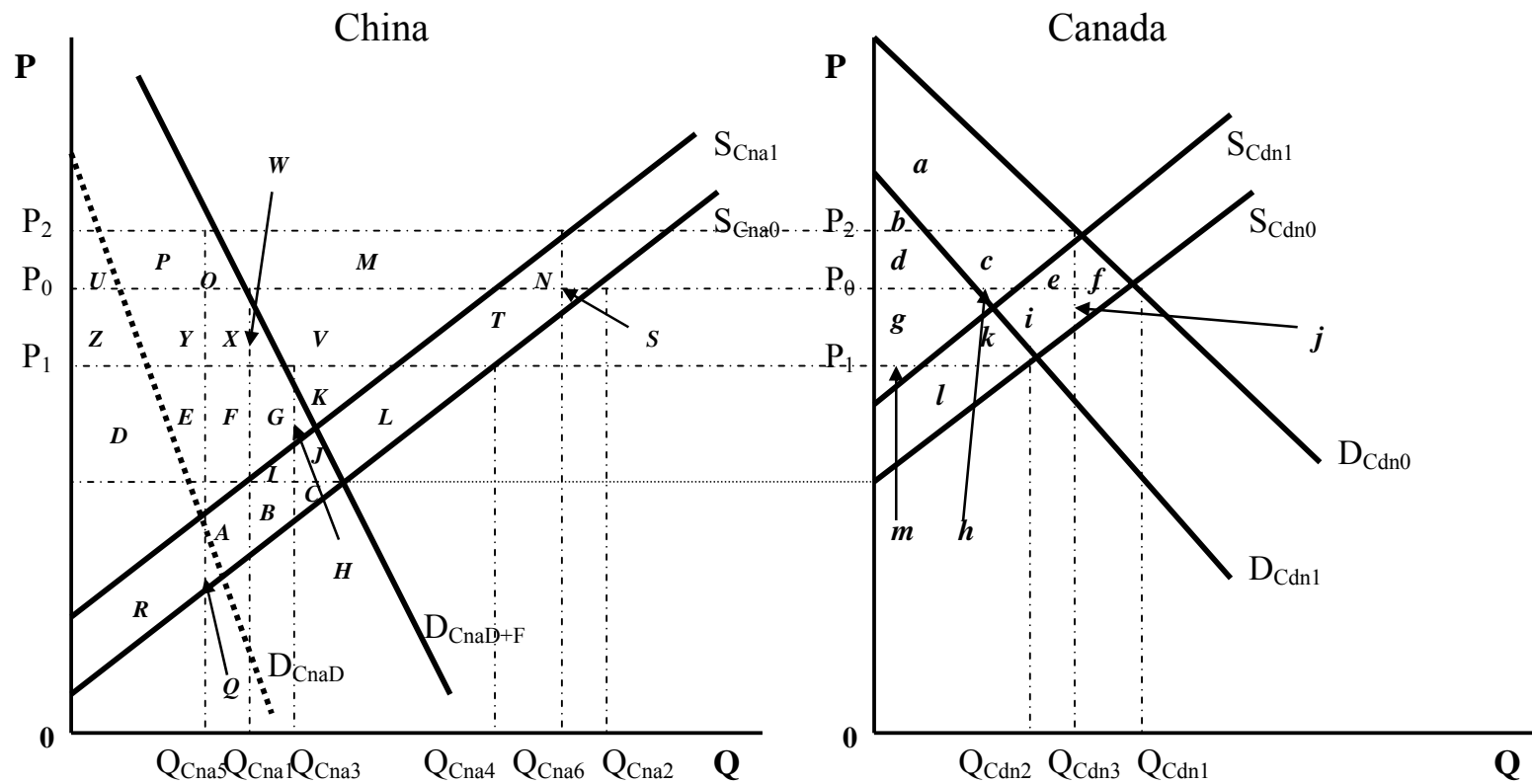
Given the growing importance of the Canadian market for Chinese food exports and the decline of trust among Canadian consumers; What should be the appropriate response of the Chinese and Canadian governments? This paper examines the welfare effects of various policy options and then examines the evolution of both the Chinese and Canadian governments' response in the wake of the spate of product safety incidents in 2007.

## **2.0 Modelling Collateral Damage and Trade Policy Responses**

This paper does not deal with trade policy responses in the case of imported products where a food safety incident has occurred. The correct trade policy response for both governments is clear in such cases. The importing country should remove the "unsafe" product from its domestic market and all imports of that product should be embargoed until the government in the exporting country makes the changes necessary to satisfy the importing government that future shipments meet or exceed an acceptable threshold of product safety. According to the provisions of the Agreement on Sanitary and Phytosanitary Measures (SPS) of the World Trade Organization, importing regulations should be "science based" and incorporate a risk assessment (Kerr, 2003). Each country is allowed to specify its own acceptable level of risk but that level of risk cannot

discriminate among trading partners and should be consistent across products – i.e. the acceptable level of risk for beef should be the same as for pork (Kerr and Hobbs, 2005). The degree of vigilance in inspecting imports and monitoring the activities of foreign supply chain participants is a subject for bilateral discussions between the importing and exporting government although in the long run these activities are governed by the WTO principle of non-discrimination.

This paper deals with cases of collateral damage. Collateral damage is suffered by imported products when no food safety incidents have occurred. Collateral damage arises as a result of a product safety incident or a series of product safety incidents that occur in other products from a particular country but where consumers experience a general loss of trust in products sourced from that country. In other words, the exporting country's label is damaged or the equity of the national brand is diminished (Innes et al., 2007). This collateral damage is a market failure and reduces economic welfare in both countries. The question arises as to what the appropriate policy response of both governments should be to correct the market failure. It is important to emphasise that these are imported products where no food safety problem has been identified and that the importing government has confidence in both the foreign government's food safety regime and in its own mechanisms to ensure the safety of food. No food safety system can ensure zero risk and the marginal costs of additional efforts to ensure the safety of food needs to be considered in the context of the additional benefits provided by those efforts (Hobbs and Kerr, 1999). The effect of collateral damage on food imports from China is modeled in Figure 1.



**Figure 1 – China-Canada Trade with Collateral Damage**

## 2.1 Collateral damage

The interaction between China as an exporter and Canada as an importer for an individual agri-food product is depicted in Figure 1. There is no domestic Canadian production of this product. Hence, the supply curves depicted in the Canadian market are Chinese export supply curves (i.e.  $S_{Cdn0}$  is the horizontal difference between non-Canadian demand for the Chinese product,  $D_{CnaD+F}$ <sup>1</sup> and Chinese supply,  $S_{Cna0}$  at any price).

In the absence of consumer concerns pertaining to the safety of imported Chinese products the demand curve in Canada is  $D_{Cdn0}$  and the Canadian market is in equilibrium at  $P_0$  and  $Q_{Cdn1}$ . The welfare of Canadians is area **a** + **b** + **c** + **d** + **e** + **f** (remembering that there is no domestic Canadian supply so the producer surplus – area **g** + **h** + **i** + **j** + **k** + **l** + **m** accrues to Chinese producers<sup>2</sup>).

In the Chinese market,  $D_{CnaD}$  is domestic demand for the agri-food product. China may also export the product to countries other than Canada. As we are interested in the interaction between the Chinese and Canadian market this additional export demand is added to the domestic Chinese demand yielding  $D_{CnaD+F}$ . Thus, China exports to Canada equal  $Q_{Cna1} - Q_{Cna2}$  in the absence of any concerns in Canada regarding the safety of food imported from China.<sup>3</sup>

Suppose there is a well-publicized food safety incident (or incidents) pertaining to imported food products from China in Canada. It is important to emphasise that there is no food safety incident pertaining to the product depicted in Figure 1. Some consumers in Canada, however, generally lose trust in the safety of food imports from China. As a result, demand declines for all food imports from China in Canada including the product depicted in Figure 1. The decline in trust results in a shift in the Canadian demand for the product to  $D_{Cdn1}$ . This shift in demand is the *collateral damage* suffered by this product as a result of

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<sup>1</sup>  $D_{CnaD+F}$  is the sum of Chinese domestic demand and the import demand of countries other than Canada.

<sup>2</sup> The producers' surplus in the Canadian market is equal to areas **v** + **t** + **k** + **l** + **s** in the Chinese market.

<sup>3</sup>  $Q_{Cna1} - Q_{Cna2}$  is exactly equal to  $0 - Q_{Cdn1}$ .



the food safety incident(s) in market(s) for other Chinese products. This is a market failure because there is no food safety problem associated with this product. The producers of unsafe Chinese products take no account of the externality they impose on other products as a result of the general decline in trust.

As a result of the collateral damage the Canadian market clears at  $P_1$  and  $Q_{Cdn2}$ . The welfare of Canadians declines from  $a + b + c + d + e + f$  to  $b + d + g + k$ .<sup>4</sup> Chinese producers surplus unambiguously declines by  $g + h + i + j + k$  to  $l + m$ .<sup>5</sup> Trade between China and Canada declines from  $Q_{Cdn1}$  to  $Q_{Cdn2}$ . The negative externality associated with the collateral damage reduces the total welfare arising in the Canadian market to  $b + d + g + k + l + m$  – a decline of  $a + c + e + f + h + i + j$ . Given the market failure, governments may wish to intervene to remove the externality and increase welfare. Governments in importing countries may also face pressure to take other actions to protect their consumers.

## 2.2 An import embargo

In the wake of the incidents pertaining to the safety of Chinese products in 2007, some consumer advocates and media commentators suggested that imports of Chinese products should be banned.<sup>6</sup> A ban would lead to a further decline in the welfare of Canadians equal to  $b + d + g + k$ . The Chinese market would clear where  $D_{CnaD+F}$  equals  $S_{Cna0}$  and global welfare excluding Canada would decline by  $k + l$ . The embargo would mean that the Chinese government would have no direct incentive to engage in activities that would rebuild the trust of Canadians – i.e. to remove the market failure<sup>7</sup>. In the absence of any evidence of

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<sup>4</sup> Assuming that  $a + c + e + f > g + k$ .

<sup>5</sup> In China producer surplus declines by area  $z + y + x + w + v + t + s$  although there is a gain in Chinese consumer surplus of  $z$ . Consumers of imports other than Canadians also gain by  $y + x + w$ . The net loss is  $v + t$ .

<sup>6</sup> Producers of close substitutes for the banned Chinese products would also benefit. We ignore any positive government response to traditional protectionist pressures.

<sup>7</sup> Remembering that there is no food safety problem for this Chinese product. Strategically, the Chinese government may wish to engage in activities that improve their general food safety system in the hope that it will persuade the Canadian government to lift the ban.

a problem with the particular product, China would have the right to bring a trade action forward to the WTO for “nullification of expected benefits” if the embargo was imposed without a reason being given or for lack of a scientific justification or a risk assessment if the ban was imposed under the SPS Agreement (Kerr, 2006). China might also wish to informally retaliate by imposing non-tariff barriers on imports of unrelated goods from Canada. Further, the imposition of an import embargo would be a tacit admission that the Canadian food safety regime for imported products is not effective, which could lead to a further broad decline in trust of imported products and, hence, a further decline in the welfare of Canadian consumers. An import embargo does not appear to be an appropriate policy response by the Canadian government.

### **2.3 Unilateral action by the Chinese government**

Given that the externality that led to the collateral damage arose from the actions of other Chinese firms or a failure in the food safety regime of the Chinese government (or both), the Chinese government might wish to engage in activities that would remove the market failure – to move the demand curve in Canada from  $D_{Cdn1}$  back towards  $D_{Cdn0}$ . These unilateral activities could take the form of increased monitoring and testing of Chinese products prior to exporting to Canada, the raising of food safety standards and increased penalties for breaches of the food safety rules and corrupt activities in the food inspection bureaucracy. These activities could involve both increased compliance costs for Chinese firms and additional budgetary expenditures by the Chinese government. The latter would include additional domestic monitoring costs and costs associated with informing Canadian consumers of the initiatives. Additional compliance costs incurred by firms would shift the Chinese supply curve to the left. If the heightened food safety activities were only applied to products exported to Canada the additional costs to Chinese firms would be a maximum of  $Q + A + B + C + J + I + L + T + N$  depending on

the efficacy of the measures in shifting the demand curve back toward  $D_{Cdn0}$ .<sup>8</sup> To this extra cost to the firms must be added the additional budgetary expenditures of the Chinese government. If the Chinese government wanted the measures to apply to all products whether exported to Canada, other countries or sold in the domestic market the total cost would expend to  $R + Q + A + B + C + J + I + L + T + N$  plus the additional government budgetary expenditure.

The benefits that accrue to China from the investment in removing the market failure, however, are equal to a maximum of  $g + h + d + c$  which is less than the total welfare loss due to the market failure (i.e.  $a + c + e + f + i + j$ ). A rational Chinese government would only incur additional costs up to the point where the marginal costs imposed on the Chinese economy equals the marginal benefit received. Given that  $g + d + c < a + c + e + f + i + j$  the probability that the Chinese government will not invest to a sufficient degree to entirely remove the market failure increases.<sup>9</sup>

## 2.4 Unilateral action by the Canadian government

The Canadian government could also act unilaterally to remove the market failure. It could increase the strictness of its import regime in an attempt to regain the trust of Canadian consumers in Chinese products – to shift the demand curve back to  $D_{Cdn0}$ . These activities could increase the costs for Chinese exporting firms to a maximum of  $I + k + i + e$  depending upon the efficacy of the measures in shifting the demand curve back to  $D_{Cdn0}$ . To the costs imposed on the Chinese firms would have to be added any increased Canadian government monitoring costs and any costs associated with informing consumers of its actions. If the Canadian government increased its monitoring of imports without increasing the

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<sup>8</sup> If the measures are fully successful in shifting the demand curve back to  $D_{Cdn0}$  then imports would equal  $Q_{Cdn3}$  and be equal to Chinese exports of  $Q_{Cna5}$  to  $Q_{Cna6}$  which leads to increased costs of  $Q + A + B + C + J + I + L + T + N$ . If the measures fail to fully shift the demand curve, exports to Canada will be smaller and the additional costs commensurately less.

<sup>9</sup> This discussion ignores the possibility that with trust the Canadian market for the Chinese product could be expected to grow – the demand in Canada would expand beyond  $D_{Cdn0}$ . Thus, the Chinese government might well be willing to invest more to regain the trust of Canadian consumers but the probability that it will under-invest relative to the potential gain in total welfare is still high.

strictness of procedures that would have to be followed by Chinese firms, then there would be no shift in the supply curve and the entire cost would be borne by the Canadian taxpayer. If no costs were imposed on Chinese firms from Canadian government activities to increase trust, then the maximum increase in the welfare of Canadians would be  $a + c + e + f$  minus  $g + k$  while if additional costs were imposed on Chinese firms equal to the vertical distance between  $S_{Cdn1}$  and  $S_{Cdn0}$ , then the maximum gain in Canadian welfare would be  $a$  minus  $d + g + k$ . If the Canadian policy was not sufficient to shift the demand curve back to  $D_{Cdn0}$  then the gain in Canadian welfare would be less than the maximum.

If the Canadian government's unilateral policy imposed additional costs on Chinese firms, the Chinese government could launch a trade complaint against the Canadian government. Remember, there is no actual problem with the safety of the product in question. The Chinese government may also retaliate unofficially by imposing non-tariff barriers on imports of unrelated Canadian products.

It may, however, be in the Chinese government's interest to cooperate with the Canadian government initiative as it may increase Chinese welfare. Again, this will depend on the efficacy of the Canadian initiative in shifting out the demand curve by restoring trust. If Canadian consumers have more trust in the Canadian government than the Chinese government, then it may be more efficient to allow the Canadian government to engage in activities to build trust – i.e. for the same increase in costs to Chinese firms a larger increase in Canadian demand may be achieved.

Again, the unilateral policy may lead to under-investment in reducing the externality. For example, the maximum gain in Canadian welfare  $a + c + e + f$  minus  $g + k$  is less than the total gain in welfare from re-establishing trust  $a + c + e + f + j + i$ . Thus, as  $a + c + e + f$  minus  $g + k < a + c + e + f + j + i$  the probability that the Canadian government will under-invest increases.

## 2.5 Cooperation between the Chinese and Canadian governments

Given that unilateral action by neither government is likely to entirely

remove the market failure, a cooperative solution is suggested. A cooperative solution has a number of advantages beyond the observation that collectively the two governments stand to obtain all of the welfare gains for their citizens.<sup>10</sup> It would allow the efforts of the two governments to be applied where they are most efficient. For example, the Canadian government may find it less costly to re-establish trust among Canadian consumers than the Chinese government. On the other hand, Chinese firms may be more willing to comply with additional regulations imposed by their own government than those imposed by foreigners. The threat of a trade action is removed because, while an importer imposing more stringent regulations than those that apply to other trading partners would violate the WTO principle of non-discrimination, there is nothing to prevent trading partners from voluntarily agreeing to raise standards. Further, open disputes between countries tend to garner media attention, which could further erode trust. Countries agreeing to cooperate to enhance the degree of safety, however, may well be seen in a positive light by consumers and ease the task of re-establishing trust. It is clear that if the effects of collateral damage are to be removed that both governments have a role. It is a market failure where unilateral action by either government may not yield the maximum welfare attainable from efforts to remove the market failure. While rebuilding trust is a complex activity and the benefits may not exceed the costs<sup>11</sup>, if demand can be returned to  $D_{Cdn0}$  cooperation between the two governments could provide the means to minimize the cost difference between  $S_{Cdn1}$  and  $S_{Cdn0}$ , thus minimizing the final distortion and loss of welfare in

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<sup>10</sup> Of course, it is not an easy task to determine the correct contribution of each government. That will depend on the relative efficacy of each government's ability to build trust and the elasticities of the supply and demand curves.

<sup>11</sup> Benefits will not exceed costs if  $\Delta(a + c + h) < \Delta(e + i + k + l) + \Delta(\text{budgetary cost to Chinese government}) + \Delta(\text{budgetary cost to Canadian government})$ . This could certainly be the case because there is no deterministic relationship between activities designed to reestablish trust and the actual garnering of trust. If the benefits do not exceed the costs then no action should be taken to remove the market failure. Given the absence of information regarding the efficacy of efforts to reestablish trust, it would not be possible to make this determination prior to the decision regarding the appropriate policy response.

the market – of course keeping in mind the budgetary costs in both countries.

Table 1 summarizes the policy alternatives.

### **3.0 China-Canada Trade in Agri-food Products**

Cooperation between China and Canada over food trade issues has a long history. Since the 1950s when Canada exported wheat to China in the face of cold war era opposition from the US and other countries, Canada has had good trade relations with China. After the two countries signed a trade agreement on the basis of most-favoured-nation treatment, prior to China's entry into the WTO, bilateral economic relations and trade have expanded rapidly. A bilateral agreement on SPS issues was also reached prior to China's WTO accession allowing an expansion in trade in agri-food products.

Currently, the agri-food products exported by China to Canada are mainly aquatic products, vegetables, edible fruits, nuts, grain and pastries. Frozen fish, apple juice, oranges, shrimp and mushrooms are among the most successful Chinese products exported to Canada.

From 1996 to 2006, agri-food trade enjoyed substantial growth with Chinese exports to Canada showing an average annual increase of 8.45 percent and Chinese imports from Canada increasing by 11.34 percent per year (Table 2). Compared to 1996, the total Chinese export and import volume in 2006 increased from 14,591,874 tons to 34,058,986 tons, and from 20,339,881 tons to 63,464,346 tons respectively. Table 2 also shows that the export volume reached a peak in 2005, at 36,164,697 tons, while import volume continued to reach new heights in 2006 with 63,464,346 tons moved into the Chinese market.

China-Canada agri-food trade reflects an increasing trend. As volumes grow and supply chains proliferate, the potential risk of food safety incidents rises as well, leading to both an increased probability of direct disruptions to trade but also an increased risk that collateral damage to the Chinese or Canadian *brand* may arise. In 2006, there were just two recalls pertaining to the milk imported from China – due to allergic reactions to a protein. In 2007, however, both the number

**Table 1: Collateral Damage and Policy Alternatives**

Policy Alternatives/Effects	$\Delta$ in Total Welfare	$\Delta$ in Canadian Welfare	$\Delta$ in Chinese Producer Surplus	Costs imposed on Chinese firms	Budgetary cost to China	Budgetary cost to Canada	Possible trade action	Other Potential Consequences
<b>Relative to pre-market failure equilibrium</b>								
Collateral damage	Decline by $a+c+e+f+h+i+j$	Net change $-(a+c+e+f) + (g+k)$	Decline by $Z+Y+X+W+V+T+S$	None	None	None	None	None
<b>Relative to collateral damage equilibrium</b>								
Import Embargo	Decline by $b+d+g+k+l+m$	Decline by $b+d+g+k$	Decline by $D+E+F+G+H+I+J+K+L$	None	None	None	Yes	Non-tariff barriers against imports from Canada Decline in trust of Canadian food safety system None
Unilateral action by Chinese government	Max increase $+(a+c+h)-(k+l)$	Max increase $+a-(d+g+k)$	Max increase $U+P+O+M+Z+Y+X+W+V$	$l+k+i+e$	Yes	None	No	
Unilateral action by Canadian government – costs imposed on Chinese firms	Max increase $+(a+c+h)-(k+l)$	Max increase $+a-(d+g+k)$	Max increase $U+P+O+M+Z+Y+X+W+V$	$l+k+i+e$	None	Yes	Yes	Non-tariff barriers against imports from Canada
Unilateral action by Canadian government – no costs imposed on Chinese firms	Max Increase $a+c+e+f+h+i+j$	Net Change $+(a+c+e+f) - (g+k)$	Max increase $Z+Y+X+W+V+T+S$	None	None	Yes	No	None
Cooperative action by Chinese and Canadian Governments	Max Increase $+(a+c+h)-(k+l)$	Max increase $+a-(d+g+k)$	Max increase $U+P+O+M+Z+Y+X+W+V$	$l+k+i+e$	Yes	Yes	No	Efficient division of effort

and the types of recalls of food products from China expanded. Melamine contamination in pet, livestock and shrimp feed were the source of major incidents (CFIA, 2007). Given the problems experienced by some Chinese products in 2007, it is Chinese exports that need the most immediate attention from both governments.

**Table 2: Agri-food Trade between China and Canada, 1996-2006**

Year	Exports to Canada			Imports from Canada		
	Volume (tons)	Value (US dollars)	Percent Change	Volume (tons)	Value (US dollars)	Percent Change
1996	14,591,874.312	1,425,035.39	-2.51%	23,596,945.553	1,082,702.03	-11.03%
1997	22,391,966.952	1,499,242.46	5.21%	20,339,880.982	996,787.63	-7.94%
1998	21,893,025.268	1,390,202.63	-7.27%	20,682,735.850	834,561.73	-16.27%
1999	21,940,653.819	1,361,878.84	-2.04%	21,274,340.594	823,789.77	-1.29%
2000	29,927,251.447	1,569,370.33	15.24%	28,974,525.753	1,125,673.11	36.65%
2001	26,455,138.118	1,608,919.84	2.52%	33,233,009.872	1,183,679.91	5.15%
2002	35,209,721.515	1,815,543.45	12.84%	29,900,171.235	1,244,567.84	5.14%
2003	44,404,775.400	2,131,933.04	17.43%	41,915,715.552	1,893,635.05	52.15%
2004	28,231,211.338	2,338,795.27	9.70%	54,456,985.374	2,799,365.36	47.83%
2005	36,164,697.340	2,759,138.05	17.97%	58,517,363.933	2,870,562.17	2.54%
2006	34,058,986.336	3,141,695.54	34.33%	63,464,345.859	3,208,523.27	11.77%

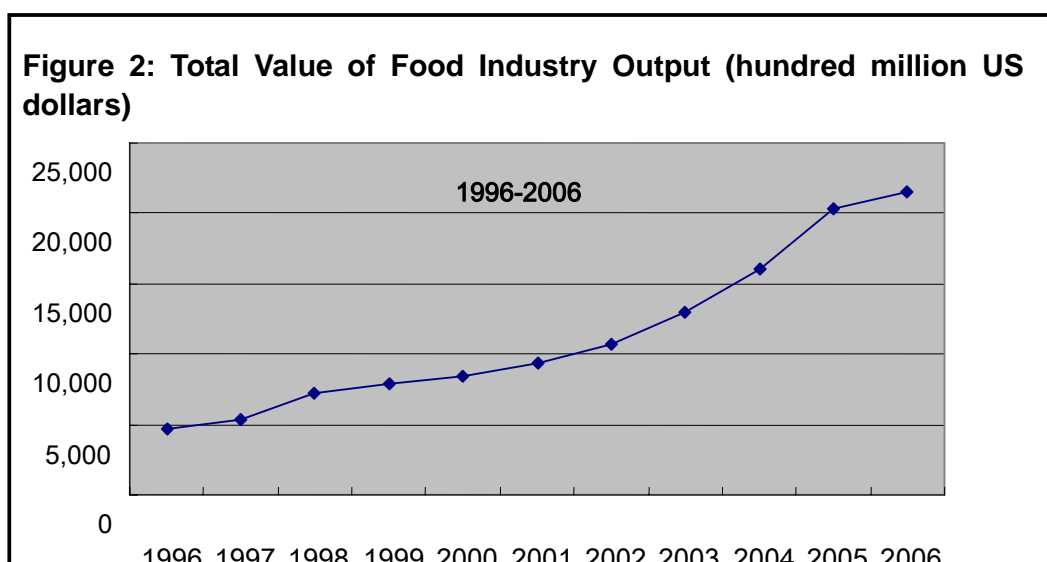
Source: The China Agriculture Yearbook, 1996-2006

#### 4.0 Food Safety in China

After a long history of battling food shortages and being a net importer, China has been a net exporter of food since 1995 (Chen Xinwen, 2002). China's population continues to increase and incomes have been rising in both urban and rural areas. Given an high income elasticity for food, both the volume and composition of food consumption has been changing. Both caloric intake and protein consumption have been rising. Further, with out migration from rural areas to cities, less and less



consumption is taking place in close proximity to where food is grown. These changes have led to a rapid expansion of the food processing and distribution sectors. The decade from 1996 to 2006 has witnessed vigorous development of food processing and distribution. The total output value of the post-farm supply chains is among the fastest growing sectors in China. In Figure 2, the gross annual value of food processing and handling enterprises above a designated size (i.e. all state-owned enterprises and those non-state-owned enterprises with an annual sales in excess of RMB 5 million<sup>12)</sup> have exhibited a sustained annual increases in growth with the average annual growth rate reaching 20 percent.



Source: The Chinese Food Industry Yearbook 1996-2006

While achieving this rate of growth represents a major accomplishment, it has not been achieved without putting considerable stress on the system. One area where the food system in China is exhibiting considerable strain is food safety. After ten years of rapid production-driven growth, the management of food safety at all the stages of production, processing, packaging, transporting, and retailing is overstretched leading to a considerable rise in incidents of food-borne illness, as can be seen in Table 3.

<sup>12</sup> 1 U.S. dollar equals to 7.7393 RMB.

**Table 3: Food Safety Incidents and Food-borne Illness in China, 1996-2006**

Year	Food Incidents	Food-borne	Deaths
1996	878	23844	177
1998	592	18533	114
1999	591	17941	108
2000	696	18262	157
2001	624	20124	143
2002	464	11572	68
2003	1481	29600	262
2004	2305	42876	255
2005	621	18220	381
2006	596	18063	196

Source : Statistical Communiqué on Development of Medicine and Health in China, 1996-2006

According to ongoing monitoring undertaken by the Chinese Centres for Disease Control and Prevention (CCDC) on pathogen contaminations in raw meat, milk products, aquatic products and vegetables in selected cities from 2000-2006, food-poisoning incidents caused by micro-organisms rank first among food safety incidents, with 39.62 percent of total incidents. Chemical poisons ranked second at 38.56 percent (Hanjun, 2007).

As the number of food safety incidents has risen, consumers have become increasingly sensitive to food-safety concerns and confidence is declining regarding the hygiene standards of, and level of safety provided by, food processors. A report concerning customer satisfaction and food safety done by the State Food and Drug Administration (SFDA) in thirty-one Chinese cities in 2006 revealed that 65 percent of Chinese consumers were worried about food safety (Xinhua, 2007). As a result, some segments of the Chinese government are clearly aware that there are urgent food safety problems that demand prompt attention.

#### **4.1 The slow pace of reform**

At present, legislation concerning food safety is scattered throughout dozens of laws, including the Product Quality Law, the Standardization Law, the Law on the

Protection of Consumer Rights and Interests, the Law on the Quality and Safety of Agricultural Products, the Law on Criminal Acts, the Food Hygiene Law, the Law on Import and Export Commodity Inspection, the Law on Animal and Plant Entry and Exit Quarantine, The Frontier Health and Quarantine Law and the Law on Animal Disease Prevention (Xinhua, 2007a).

A Food Hygiene Law is in place, and centres on the legal regime pertaining to food hygiene. There is not, however, a specific legal regime for food safety. The first food safety law in the Peoples Republic of China – the Regulations on the Administration of Food Hygiene – was issued in 1965 by National People's Congress (NPC). Given that it was promulgated prior to the era of market reforms and privatization, its focus was state-owned food processors and emphasized the security of the food supply rather than food safety. This law largely lapsed due to the collapse of the legal system in China during the Cultural Revolution. At the end of 1970s, to keep pace with the development of China's economy, many new laws were put in place and regulations reworked and updated. In 1979, the Regulations on the Administration of Food Hygiene were drafted still based, however, on the 1965's version. Three years later, in 1982, a new Food Hygiene Law replaced it. It was to be a trial implementation that attempted to accommodate the requirement of ongoing economic reforms. A revised Food Hygiene Law was put in place in 1995. It consisted of 57 articles that cover general principles and standards pertaining to food hygiene, food additives, packaging of, and containers to be used for, food products, and the supervisory system for food hygiene. It also laid out the penalties for breaches of the Food Hygiene Law.

The 1995 Food Hygiene Law has a number of flaws and weaknesses. First, the scope of food, as defined, did not include the agricultural products in the production stages of planting, breeding and pre-processing storage and, further, did not encompass food additives, animal feeds and feed additives. Hence, the law does not take a *from-farm-to-fork* or *land-to-table* approach, which leads to difficulties with the regulation of pesticides residues, antibiotic overuse and product contamination.

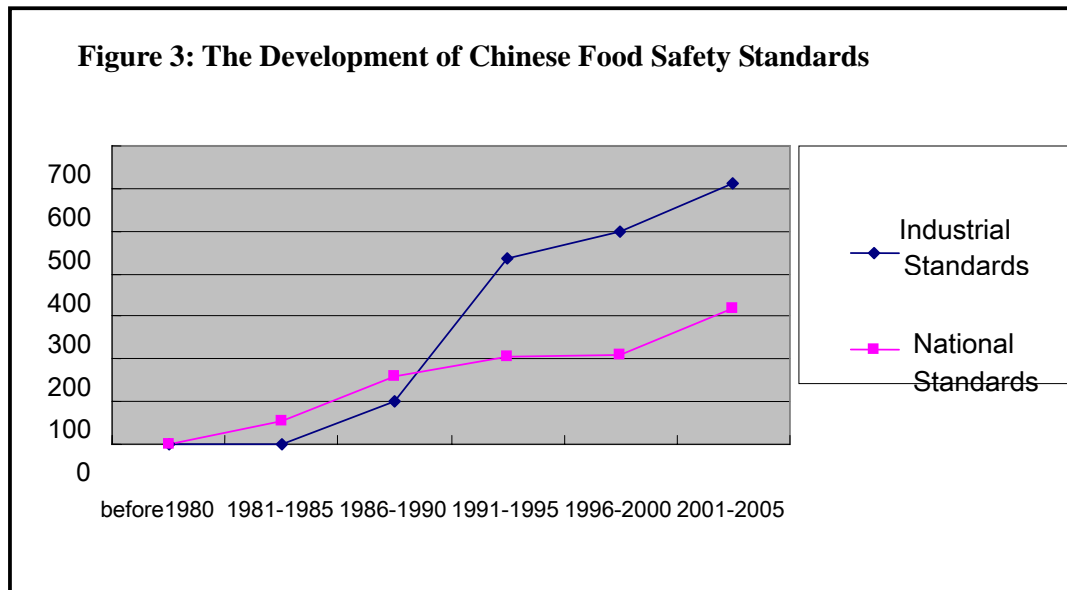
Second, the regulations lack a system of legal liability. As a result, the penalty for a food enterprise proprietor breaching the law is light and, as a result, is an insufficient deterrent. For example, if a food producer is found to have failed to meet the requirements specified in the regulations for hygienic processing, they will be given a disciplinary warning and may also be fined not more than RMB 5000; if they subsequently refuse to correct their improper practices or are found to have other serious lapses, their hygiene license will be revoked. The punishment of conduct violating the rules of food hygiene should be the most elementary requirements of a food safety regime. While the penalty is limited to a maximum fine of RMB 5000, there is also scope for regulatory agencies to impose lower fines or to not penalize violations at all. Third, the 1995 Food Hygiene Law did not establish a system to deal with major food safety incidents, such as the outbreak of bird flu in China in the spring of 2004. Although the government quickly enacted a series of orders upon the onset of bird flu, the law remains unclear as to what would be required if there were to be another food safety incident of a similar nature.

It is quite obvious that the law has lagged behind in the development of China's economy and food industry. The promulgation of a special law covering all aspects of food safety might be a better avenue than the current piecemeal approach for strengthening food safety.

#### **4.2 Overlapping, contradictory and internationally inconsistent food safety standards**

In the post-Maoist era of economic reform and gradual opening of the Chinese economy, standards related to food safety have increased at a rapid rate as can be seen in Figure 3. A food quality and safety standard system is taking shape in China. It includes 1,800 national food safety standards developed by the government, and over 2,900 private standards adapted or developed by private industry. Six hundred and thirty-four national standards are compulsory (Xinhua, 2007a). The harmonization of national standards to Codex Alimentarius Commission (Codex) standards is improving.

For example, the convergence between Chinese standards for tolerance, in the case of contamination, and Codex standards reached 81 percent (i.e. the same contaminant and same food category). For pesticide residues, convergence of Chinese and Codex standards increased from 14.6 percent to 85.4 percent (same pesticide and same food category) (Kan Xuegui and Zhang Zhiqiang, 2005).



Source: Hanjun, Report on Food Safety in China 2007, p.5

There are, however, still some outstanding problems that need to be dealt with:

- The standards are not unified so there are overlapping and sometimes inconsistent standards for the same food products. For example, there are more than 40 standards relating to milk products and in the case of food suitable for infants there are five different standards alone for the formulation of milk powder-based products. This results in a degree of confusion for both food enterprises and enforcement agencies.
- Some standards are absent or poorly specified. If one compares China's standards and the standards of the Codex and the ISO there is an incomplete classification system and a lack of quality thresholds for raw materials used in fruit and vegetable processing. These deficiencies create difficulties for

certifying the quality of agri-food products and in certifying that products are of a higher quality, that would justify a price premium.

- A number of standards are lower than international norms. For example, for grains the Chinese tolerance threshold for lead is 0.4mg/kg, while the Codex standard is only 0.2mg/kg. A number of Chinese standards for the tolerance of pesticide residue are one-fifth to one-half of those in the European Union and a few diverge to an even greater degree (Table 4).

**Table 4: Chinese and European Union Tolerance Standards for Pesticide Residues**

Name of Pesticide	mg/kg		Agri-food Product	Chinese Standards/ EU Standards
	Chinese Standards	EU Standards		
ACEPHATE	0.5	0.02	Fruit	25
CARBARYL	2.0	0.5	Vegetables	4
CARBENDAZIM	0.5	0.1	Fruit, Vegetables	5
CARBOFURAN	0.5	0.1	Rice	5
CHLOROTHALONIL	1.0	0.01	Fruit, Vegetables	100
FENVALERATE	0.2	0.05	Fruit, Vegetables	4
METHAMIDOPHOS	0.1	0.01	Rice	10
DIAXINON	0.1	0.05	Crude Grain	2
PHOSPHAMIDON	0.1	0.05	Crude Grain	2
ALDRIN	0.02	0.01	Crude Grain	2
DIELDRIN	0.02	0.01	Crude Grain	2

Source: Hanjun, Report on Food Safety in China 2007, p. 227

#### 4.3 Decentralized administrative structure

Currently, the supervision of food safety involves the departments of environment, agriculture, quality supervision and inspection, industry and commerce, and human health, with little coordination effort from the central government (Table 5).

Further, given the hierarchical structure of the Chinese administrative system where delivery of many functions is carried out by provincial and local governments, there is little coordination of food safety activities at the county level. Primary production in agriculture is supervised by the State Administration of Environmental Protection (AEP) and the Ministry of Agriculture (MOA); the quality and daily hygiene of food processing is overseen by the State Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ); the transportation, storage and distribution of food is the responsibility of the State Administration of Industry and Commerce (SAIC); hotels, restaurants and institutions that serve food are supervised by the Ministry of Health (MOH). In addition, imported and exported agricultural products and other foodstuffs are overseen by the Quality Supervision and Inspection Department. A State Food and Drug Administration (SFDA) was put in place in 2003, with responsibility for integrated food-safety supervision and coordination as well as the investigation of and imposition of penalties for major food safety incidents. The SFDA, however, has no power to overrule government ministries. The SFDA is only a semi-ministry and has to coordinate with several ministries that have a higher administrative rank. When there is a conflict between these departments, the SFDA's decisions or opinions can be ignored and may well not be implemented. Thus, it is almost impossible for the SFDA to fulfill its coordination mission while so much overlap and separation of jurisdictions remain.

As a result, when the entire supply chain from *land to table* is considered, this dispersed structure neither facilitates coordination nor supports effective implementation of food safety regulations. Problems associated with overlapping functions, overstaffing, a divorce between powers and responsibilities and duplication of law enforcement efforts are inevitable. Each department often considers only its own interests when there are food safety incidents or disease outbreaks. Moreover, superfluous laws and regulations enacted by different departments impair rather than enhance the administration of food safety and increase costs. Food producers do not receive clear signals from regulators. The frequency of food safety incidents and a

number of scandals involving the conduct of officials in recent years have revealed loopholes in managerial accountability and inefficiency in the supervision system.

**Table 5: Governmental Agencies Involved in Food Safety in China**

Agency	Functions	Stage
<b>AEP</b> Administration of Environmental	<ul style="list-style-type: none"> <li>- Standards for environmental quality</li> <li>- Protection of air, soil and water</li> <li>- Chemical hazards</li> </ul>	Planting (breeding)
<b>MOA</b> Ministry of Agriculture	<ul style="list-style-type: none"> <li>- Production of plants, animals and fish</li> <li>- Pesticide residues</li> <li>- Animal and feed hygiene</li> <li>- Veterinary medicines</li> </ul>	Primary Production
<b>AQSIQ</b> Administration of Quality Supervision, Inspection, and Quarantine	<ul style="list-style-type: none"> <li>- Food standards</li> <li>- Food processing and producing practices and guidelines</li> <li>- Inspection and Quarantine of imported and exported food</li> </ul>	Food Processing
<b>AOIC</b> Administration of Industry and Commerce	<ul style="list-style-type: none"> <li>- Labeling registration</li> <li>- Market commodity surveillance</li> </ul>	Transportation, Storage and Distribution
<b>MOH</b> Ministry of Health	<ul style="list-style-type: none"> <li>- Food borne illness</li> <li>- Food contamination</li> <li>- Protection of public health</li> <li>- Hygiene surveillance of restaurants and canteens</li> </ul>	Consumption
<b>SFDA</b> State Food and Drug Administration	<ul style="list-style-type: none"> <li>- Food safety coordination</li> <li>- Food safety monitoring and enforcement</li> <li>- Risk assessment of food safety hazards</li> </ul>	The entire supply chain

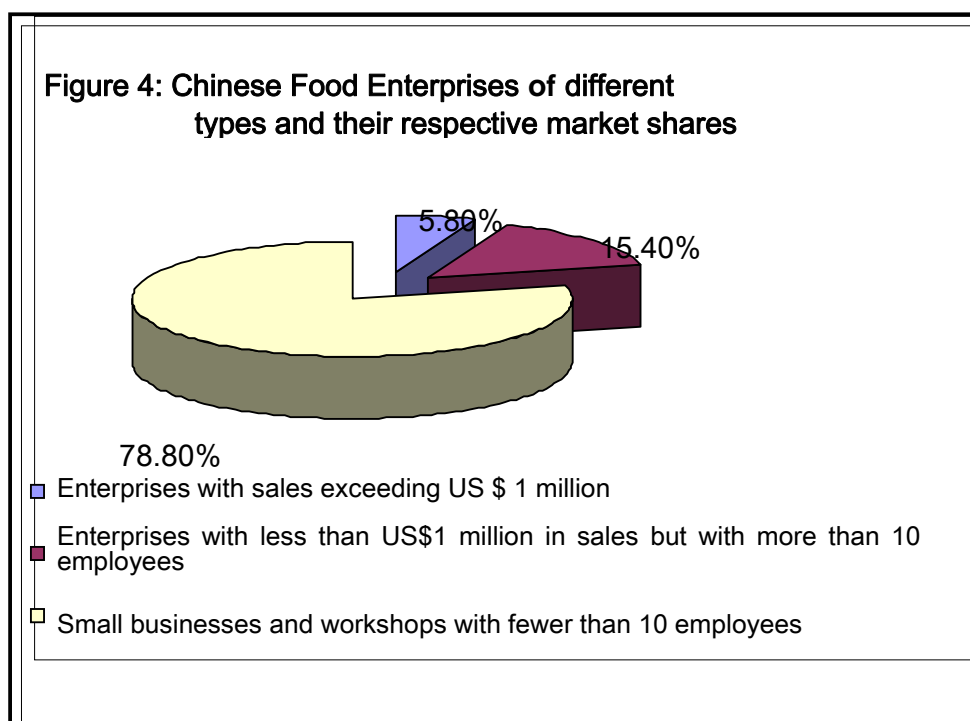
Given the multifaceted structure of food safety management, in order to strengthen the supervision of exporting foodstuffs, China has adopted a hygiene registration system for all enterprises producing food for export. An enterprise has to be registered before engaging in the production of food for export. Thus far, 12,714 enterprises have been registered, among which 3,698 have passed the HACCP certification program of the entry-exit inspection and quarantine authorities (Xinhua, 2007a). Hence, firms exporting food products are generally safe and can comply with the trading partner's standards.

#### **4.4 A large number of small scale food processors**

The Chinese regulatory system for food safety has difficulty dealing effectively



with the very large number of small-scale food processing plants that characterize the industry. Most food producers are small traditional enterprises with inadequate capital to fully utilize modern processing techniques. Food processors are often family businesses using family labour. At present, China has approximately 448,000 enterprises engaged in food production and processing. Of them, only 26,000 enterprises are large enough to be considered modern industrial enterprises – those with annual sales in excess of US\$1 million are deemed to be of a *designated scale*, 69,000 are enterprises with less than US\$1 million in sales but with more than ten employees, and 353,000 are small businesses or workshops with fewer than ten employees (Xinhua, 2007a).



Sources: Xinhua (2007) White Paper on Food Quality and Safety 2007-08-17. Available at: [http://www.chinadaily.com.cn/china/2007-08/17/content\\_6032557.htm](http://www.chinadaily.com.cn/china/2007-08/17/content_6032557.htm).

Poor machinery, obsolete technologies, poor management skills and low levels of technical education in small family enterprises are the source of many food safety problems. These small-scale enterprises also have little or no motivation to comply

with national regulations if they do not face penalties for non-compliance, or if they must incur significant compliance costs. Further, they may pursue profits in the short run rather than attempting to build a reputation.

Clearly, China's rapid economic growth and increasing integration into the global economy have required reforms to the food safety regime and have put considerable stress on its administrative structures. This does not mean that food safety problems in China are endemic. Given the challenges faced by developing countries, China's food safety record is very good. Of course, there is always room for improvement. As with any large bureaucracy, change will be a slow and torturous process without a major shock. The rash of product safety incidents, with Chinese made products in 2007, may have provided that shock. Beyond dealing with the specific product where safety problems arose, China's government has taken swift action aimed at reducing the collateral damage its products have suffered in foreign markets.

## **5.0 China's Food Safety Reforms**

### **5.1 The food safety recall program**

The Chinese government introduced a recall system for unsafe food on August 27, 2007. The General Administration of Quality Supervision, Inspection, and Quarantine (AQSIQ) issued a document titled *Provisions on the Administration of Food Recalls* (China Update, 2007). Food manufactures were charged with the major responsibility for keeping unsafe food out of the market

According to the Provisions, the AQSIQ, and its regional branch departments as the direct supervisory authorities, will have administrative responsibility for food recalls. In addition, to provide technical support for the investigation and assessment of food safety, the AQSIQ and its regional branch departments will establish an Expert Committee of Food Recalls (the Expert Committee). A food recall information system will also be put in place by the AQSIQ, while regional branch departments have the duty to keep food quality records for the manufacturers within their jurisdictions. Moreover, food manufacturers are required to set up complete product quality and

safety records and relevant management systems and also to promptly report information pertaining to food hazards to the governing provincial or municipal quality supervisory authorities.

Food recalls in each category are divided into three levels on the basis of the degree of harm and social impact. First-level recalls apply to unsafe food that has induced or may result in serious harm, or where the product has been widely distributed or has a great social influence. For the latter, read the *potential to cause considerable collateral damage* to a range of Chinese products. Second-level recalls are used in the case of unsafe foods that cause moderate harm, or that have a limited distribution or moderate negative social influence. Third-level recalls are applied to unsafe food that can cause a small degree of harm or whose labels do not provide sufficient information on the ingredients contained.

Further, food recalls are classified into proactive or compulsory under different situations. For proactive recalls, once the food is confirmed as unsafe, the manufacturer must immediately cease to produce or sell its product, and must recall it in the following specified manner: (1) after the food is confirmed as being unsafe, distributors must be told to stop selling the food within one day. Consumers must also be notified within one day for first-level recalls, two days for second-level recalls, and three days for third-level recalls; (2) after the food is confirmed as being unsafe, the manufacturer must submit a food recall plan to the supervisory authorities within three days for first-level recalls, five days for second-level recalls, and seven days for third-level recalls; and (3) after the recall is implemented, the manufacturer must submit progress reports on the recall to the supervisory authorities within three days for first-level recalls, seven days for second-level recalls, and fifteen days for third-level recalls.

As for compulsory recalls, the AQSIQ will directly intervene to force a food manufacturer to recall its unsafe food and issue a consumer alert, or adopt other measures to prevent hazards if the manufacturer deliberately conceals food hazards, or fails to take actions when it should have proactively recalled it.

For the purpose of providing incentives for food manufacturers to comply with the regulations, the Provisions contain penalties for both food manufacturers and food administrators. For example, a food manufacturer that breaches the Provisions and fails to stop selling unsafe food will first be given a warning and a deadline by which it must comply. If the food manufacturers do not comply, they will be fined RMB30,000. On the other hand, if a government employee, an expert or a staff member engaged or employed in a food safety investigation pertaining to a food recall invents or spreads false or exaggerated rumours, violates secrecy provisions or falsifies conclusions, they will be subject to administrative disciplinary action. If they are the cause of losses, they will bear legally liable. If a crime is committed, the offender will be subject to criminal prosecution.

## **5.2 The food safety inspection program**

This program includes two parts. The first was a four-month long nationwide intensive inspection and evaluation of the food safety system starting in September, 2007. The goal was to eradicate hidden potential causes of food accidents in rural regions and regions of urban-rural interface. It represented the largest effort to improve food safety in over a decade and covers farm level produce, processed food, the hotel, restaurant and institutional sector, drug use, imported and exported goods and products closely linked to human safety and health. For farm produce, the use of pesticides, veterinary medicines, feed additives and fertilizers that have been banned or limits specified for their application are priority areas for improvement. Eradicating the use of banned pesticides, agricultural chemicals and feed additives and strengthening the inspection of imports and exports of food products are also priority areas. In the processed food and the restaurant sector, the focus was on small-sized food companies, workshops, restaurants and small retailers in rural areas. In these enterprises, locally processed foods are commonly incorrectly labelled or contain inferior ingredients. All food processors, restaurants and retailers were to be inspected to ensure that they have business and hygiene licenses. Vegetables, fruits, meat, edible oils, aquatic products, children's food and health food are the main target

products (China Daily, 2007).

By the end of 2007, all unlicensed restaurants were to be closed and all food producers must be deemed qualified by AQSIQ. In addition, they are expected to report food safety accidents in a timely manner. Government, at the township and county levels must establish food accident response systems and the monitoring and test results are to be made public (GOV, 2007).

The second part of the program is targeted at increasing inspection capacity. The central government is investing 8.8 billion yuan (US\$ 1.2 billion) to improve food and drug monitoring. This investment will improve inspection technology for the agencies responsible for food and drug administration over three to five years (Xinhua, 2007b).

The investment will be used for the renovation of sixteen testing centres dealing with imported drugs, a renovation of the National Centre for Medical Devices Testing and to improve the facilities of the local food and drug supervision bureaus in the western and central parts of China (Xinhua, 2007b).

### **5.3 The food safety labelling program**

On August 27, 2007, the Chinese government launched a new set of food labelling rules. The General Administration of Quality Supervision, Inspection, and Quarantine (GAQSIQ) enacted the Administrative Provisions on Food Labelling. In the process it repealed the Provisions on Punishing Food Labelling Violations that the former State Bureau of Technical Supervision promulgated in 1995(China Update, 2007).

The new Provisions will apply to the labelling of food and require that the following information appear on food labels: (1) name of the food, (2) place of production, (3) name and address of the manufacturer, (4) production and expiration dates, “best by” and/or “consume by” dates, (5) an ingredient list, (6) the serial numbers of the national, trade, or local standards that the product adheres to, and (7) the quantity of the product.

The Provisions outline the legal liabilities facing violators of the above

guidelines. For example, if an entity fails to correctly label a food product or its packaging, it will be ordered to correct the violation within a certain period of time, and pay a maximum fine of RMB 10,000.

In addition, starting on September 1, 2007, the AQSIQ now requires all packaged food for export to have a quality guarantee label. Food packaged for export will not be allowed to leave the country if the product does not have an inspection and quarantine symbol so as to effectively curb illegal exports of food, protect the interests of legal export enterprises, rebuild consumers' confidence in the quality and safety of food made in China (i.e. eliminate the collateral damage), and help trace and recall products. The new measures, as part of a broader plan to improve quality standards, targets seafood, eggs, rice, vegetables, oil, wine and biscuits (China Embassy, 2007).

It is clear that the Chinese government has been shaken by the extent of the collateral damage arising from the product safety incidents associated with a few products in the early part of 2007. It is doing what is expected from the model developed in Section 2. It is making both budgetary expenditures and imposing additional costs on Chinese firms. Given that the collateral damage extends to a number of markets in developed countries, the measures reported here are unilateral in nature. To examine if there are cooperative measures, Canada's response is outlined in the next section.

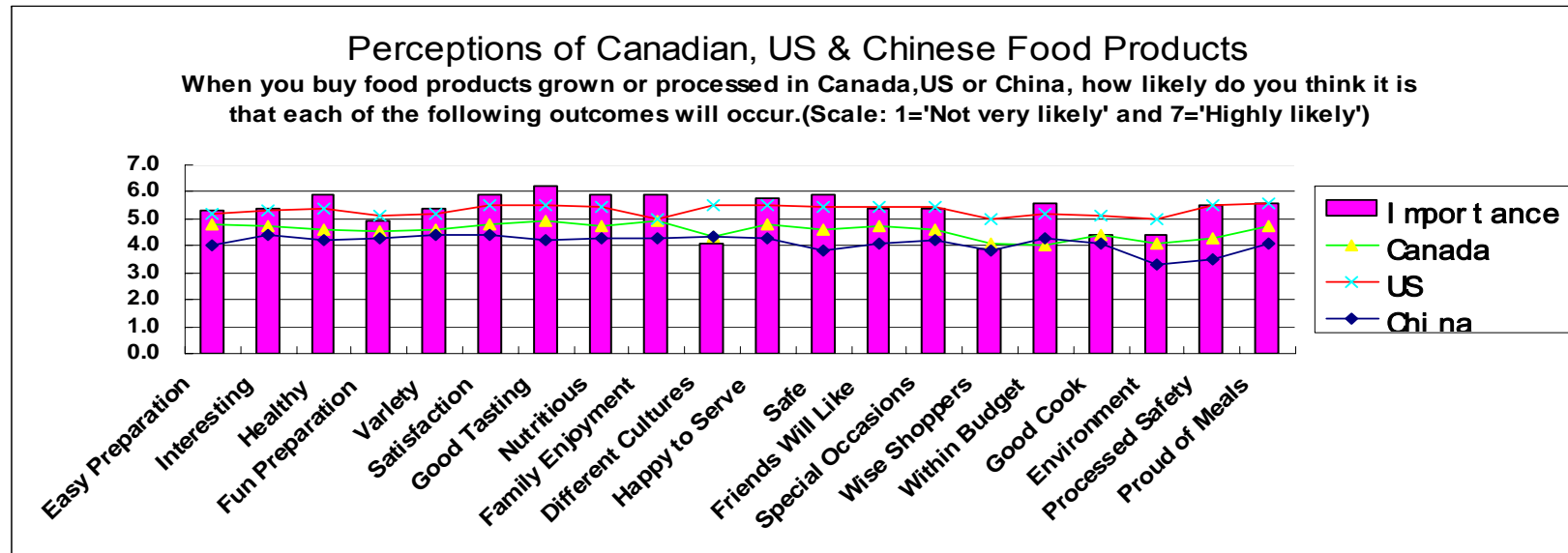
## **6.0 Canada's Response to Food Imported from China**

Due to the widespread media reports pertaining to the safety of Chinese products, the confidence of Canadians in *Made-in-China* goods has been shaken, according to an Angus-Reid poll released in the fall of 2007. The survey showed that 51 percent of respondents were paying closer attention to product labels indicating *Made-in-China* when shopping due to recent recalls of Chinese-made products. The survey also reported that 83 percent said Chinese products sold in Canada should carry a label of origin stamp and 62 percent said Canada should consider a ban on Chinese goods until China establishes more stringent safety controls (CBC, 2007b).

Another survey undertaken by Agriculture and Agri-Food Canada (AAFC) in November 2007 attempted to gain insights into Canadian perceptions of Canadian, US and Chinese food products. The survey indicates that, compared to the food products originating in Canada and US, Canadian consumers have a generally lower image of food products imported from China. Chinese products were perceived as less interesting, less nutritious, less environmentally friendly and less safe than both Canadian and US products (Figure 5). Further, on criteria such as 'have a good reputation', 'am willing to buy', 'known for wholesome foods', etc, Chinese products were consistently ranked lower than those for the US and Canada (Figure 6). These results suggest that Chinese products are suffering from *collateral damage* in the Canadian market.

In addition to the widely reported incidents of product safety problems with imports from China, some Canadian consumers became ill from eating seafood originating from China. While the seafood problem was effectively dealt with, the Canadian government has been increasingly aware of a decline in the trust of Canadian consumers regarding food products from China. Individuals, some consumer advocacy groups and the media have suggested, and sometimes demanded, that the Canadian government take action to ensure the well-being of Canadians. The Canadian Food Inspection Agency (CFIA) – which is responsible for protecting Canadians from unsafe food products – and more broadly the Canadian government has maintained that its oversight of imports of food from China is more than adequate and that it has no plans to change its operations. In particular, the CFIA has been holding fast to the principle of targeting problems rather than targeting countries to solve any real problems with the safety of imported foods. As suggested in the model developed in Section 2, this is consistent with Canada's WTO obligations not to discriminate in its application of SPS regulations. Further, the Canadian government has refused to heed the calls coming from some quarters for an import embargo on Chinese food products.

**Figure 5: Canadian Consumer Perceptions of Canadian, US and Chinese Food Products**

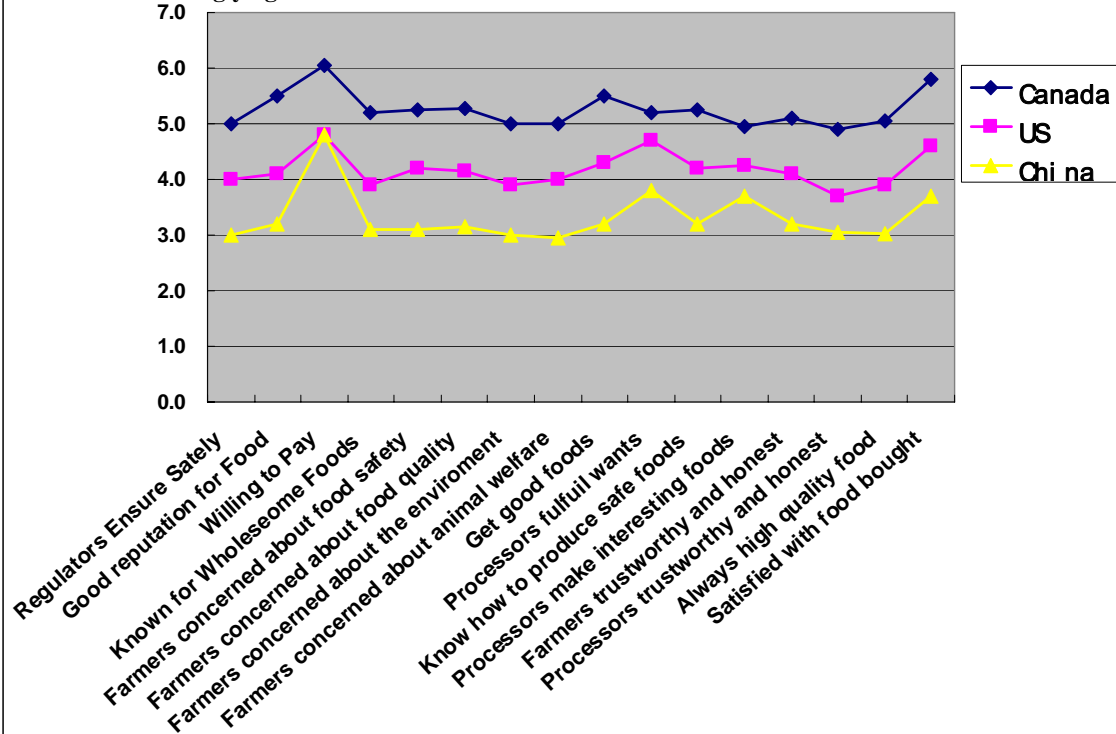


Source: Linda Robbins, Marketing and Branding in the Canadian Agri-Food Market, Market and Industry Services Branch, AAFC.



**Figure 6: Perceptions of Canadian, US & Chinese Food Systems**

Please indicate your level of agreement with each of the following statements about Canada, US or China and its food. (Scale: 1='strongly disagree' and 7='Strongly agree')



Source: Linda Robbins, Marketing and Branding in the Canadian Agri-Food Market, Market and Industry Services Branch, AAFC.

Consumer's trust and confidence are an essential element of a well-functioning market – one that, for example, does not suffer from the market failure arising from collateral damage. Given the welfare loss suffered by Canadians due to collateral damage, the government has an important role to play in rebuilding trust. According to the 2007 *Speech from the Throne*, the Canadian government committed to "introducing measures on food and product safety to ensure that families have confidence in the quality and safety of what they buy." Moreover, on December 17, 2007, Prime Minister Stephen Harper announced Canada's Food and Consumer Safety Action Plan. This Action Plan proposes to enhance Canada's health and safety protection system by supporting collaboration, strengthening safety programs and replacing outdated statutes with new regimes. Fundamental to the Action Plan is a focus on active prevention, targeted oversight and rapid response (HC, 2008). This initiative is aimed at taking proactive measures to enhance the effectiveness of the systems used to ensure product safety. It does not target countries but rather is targeted at problems. Hence, it is consistent with the non-discrimination obligations assumed by Canada under the WTO.

While maintaining the existing import regime helps to calm any reservations consumers have regarding the government's diligence in protecting their well-being, it does nothing to correct the market failure associated with collateral damage. As shown in Section 2, collateral damage suffered by foreign food products reduces the welfare of Canadian consumers. A cooperative approach was one potential option for dealing with the problem of collateral damage. The Canadian government appears to be pursuing a cooperative strategy through two important initiatives.

Health Canada has launched a new Canada-China Joint Committee, which consists of representatives from a number of Canadian and Chinese government departments. It also invites academics, researchers, and representatives from non-governmental organizations involved in health matters to attend meetings, to share information, to assist in establishing goals and be involved in addressing emerging issues. Subjects to be discussed by the Joint Committee include: (1) food,

drug and product regulations; (2) emerging infectious diseases and; (3) the promotion of scientific exchange (CBC, 2007c).

Health Canada also signed a Memorandum of Understanding (MOU) with the Chinese General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ) to enhance cooperation on issues related to consumer product safety and establish a mechanism to allow urgent contact between the two countries whenever a product safety issues arises. The MOU contains three major provisions: (1) the establishment of technical working groups that will share information on regulatory requirements and laboratory testing procedures for specific consumer products of common concern, such as toys and children's jewellery; (2) the organization of training workshops for Chinese manufacturers in order to ensure their full understanding and compliance with Canadian safety requirements; and (3) the putting in place of common approaches to information-sharing and ongoing mechanisms to facilitate information flows between the two governments, including an urgent consultation mechanism which would be used when critical product safety issues arise (CBC, 2007c).

Above all, the cooperation approach is focused on strengthening information sharing and enhancing transparency. While thus far the cooperative approach appears to be a fruitful one, some challenges remain.

First, for Canada the biggest challenge in dealing with China is the inherent culture of secrecy that pervades the Chinese government – transparency is an almost unknown concept. Further, it is often unclear which Chinese agency CFIA should be dealing with on a specific issue. If they do not know who to contact, it is more difficult to deal with problems when they arise. Take the process for obtaining a list of facilities approved to export as an example. Although China has a good system for certifying exporters, in practice it is very difficult for a Canadian importer or the CFIA to obtain information on the identity of certified exporters. Canadian importers and the CFIA need a quick and reliable way of identifying approved Chinese exporters.

The second major challenge concerns the frequent use of brokers or agents by Chinese firms wishing to export. A processing facility that is approved for export in

China may sell to a broker. The origin of the product then becomes anonymous, meaning that neither Canadian importers nor the CFIA can determine which export plant the products came from, including whether it was a licensed exporter. It also means that if there is a recall or an import alert involving products from China, it is more difficult for the CFIA to identify the source of the problem. Traceability is absent in such cases.

The third challenge is differing perspectives on food safety. For example, Canadians are very concerned about Botulism in food; tolerances pertaining to Botulism are very low. Conversely, until recently Chinese consumers usually ate, for example, fresh or dried mushrooms and they did not understand why a small amount of Botulism in canned mushrooms represented a grave danger – it is simply outside the realm of their experience. Hence, communicating problems that are important for Canadians is sometimes difficult.

The fourth major challenge in dealing with China pertains to personnel in food processing establishments. Often managers or workers are used to doing things by rote. They agree on the rules and procedures for processing the food, and then they follow the rules literally and very closely. They may not, however, fully understand the food safety objectives behind the rules, so that when something occurs that is not covered by the rules they have difficulty initiating the appropriate response. This is a food safety management problem that requires training and new ways of thinking about production processes.

## **7.0 Conclusions**

Food safety and international trade are increasingly intertwined (Buzby, 2003). China-Canada trade in agri-food products is expanding rapidly and it is in the interest of both countries to ensure that there is a high degree of trust in the systems in place to provide safe food. In 2007 a number of high profile product safety incidents with goods of Chinese origin took place around the globe. These incidents eroded the trust of Canadian consumers in the ability of both Chinese firms and the Chinese government to ensure the safety of exports as well as their trust in Canadian

institutions having responsibility for food safety. China reacted quickly to the recent food safety incidents in order to minimize financial losses and to restore its reputation. The Chinese government has endeavoured to improve food quality and safety, issuing a series of new regulations on controlling food product quality and food safety. Among those regulations are administrative provisions on food recalls, food inspection and food labelling; implementation plans for the regulations are also laid out. The Canadian government has defended the integrity of its food safety institutions. It has also moved to cooperate with the Chinese government in its efforts to enhance its food safety system and rebuild its reputation.

This paper has examined the question of the appropriate trade policy response in the face of collateral damage – a market failure that occurs when there is a loss of trust in the safety of a product when no food safety problem has been identified. Collateral damage will likely lead to a loss of welfare for both the importing country and the exporting country. Hence, it is in the interest of both countries to work to restore trust so that the market failure is removed. Unilateral action by either the importing or the exporting country is unlikely to lead to the elimination of the market failure. In addition, some forms of unilateral actions by an importing country may lead to trade actions – primarily because they would violate the principle of non-discrimination. Such unilateral actions may also carry the risk of retaliation in the form of non-tariff barriers being imposed on unrelated goods of the country taking the unilateral action. For all these reasons, a cooperative approach such as that taken by Canada and China is suggested. Further, cooperation can allow the discriminatory increase in food safety efforts without the threat of trade actions or non-transparent retaliation.

Cooperation can lead to an efficient approach to removing the market failure. Rebuilding trust is a poorly understood activity. It may be very difficult for the Chinese government to unilaterally rebuild the trust of Canadians. The same result may be attained by the Canadian government at a much lower cost. On the other hand, Chinese firms may be more willing to agree to cost increasing food safety measures

suggested by the Chinese government than if they are demanded by foreign governments.

No food safety system can be completely effective. Food safety incidents will occur for both products of domestic origin and for imports. Key to maintaining trust in the safety of food is a quick and transparent response – a business as usual approach. The Chinese government has yet to fully understand the importance of this measured response to food safety incidents. It tends to favour high-level political responses to incidents. The media coverage associated with this approach to food safety policy is likely counter productive to the goal of regaining the trust of consumers in developed market economies, including Canada. This clash of cultures is very transparent in a globalized market. While the Chinese government is taking measures to update and strengthen its food safety system, it has yet to achieve a “business and usual” image for its food safety system among consumers in developed countries. This is an area where cooperation with the Canadian government has much to offer.

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