Rationales for the selection of the case studies

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Introduction

Non-tariff measures (NTMs) come under many different shapes and forms. While there is still a long way before trade liberalization in agri-food markets reduces the tariff barriers to the level observed in industrial sectors, bilateral and regional initiatives to lower import tariffs have certainly contributed to the growth in agri-food trade. At the same time, many countries are concerned that NTMs could be substituted for explicit tariff barriers in response to protectionist pressures. Conversely, NTMs can also play an important role in the current environment where evolving food preferences and technology contribute to increase segmentation of food markets in which consumers value food safety and their own footprint on the planet. In that regard, NTMs will impact the different stages of the agri-food supply chains in many different ways based on domestic market structure, exporters' behavior and a host of different structural variables and parameters such as consumer preferences, policies, etc. The objective of Work Package #6 (WP6) of the NTM-Impact research project is to analyze the impact of NTMs on the relative competitiveness of the EU and selected trade partners at a highly disaggregated level. This exercise should allow us to capture many specific features of supply chains that would be absent at a more aggregated level.

The purpose of this working paper is to present a brief description of the various case studies that will be analyzed as part of WP6. Globally, the set of case studies focuses on product-trade clusters that have a particular economic interest to the EU: fruits and vegetables, meat and dairy. The selection of case studies is based on the important criterion that it must provide an analysis of the relative competitiveness of European exporters in one particular sector. Yet, the rationale behind the selection of the case studies can vary across and within a product-trade cluster. It can be based upon the product significance for EU stakeholders, import market significance for EU stakeholders, concerns that were raised in front of World Trade Organization (WTO)'s Dispute Settlement Body (DSB) or trade frictions officially expressed by European authorities, etc.

This document offers a review of the different case studies which are categorized in three clusters (dairy, meat, and fruits and vegetables). Research efforts targeted at the dairy sector involve:

- measuring the impacts of Canadian new compositional standards for cheese on the competitiveness of EU exports in relation to other exporting countries such as New Zealand and the U.S;
- estimating the tariff equivalent of U.S. NTMs on cheese imports from the EU, New Zealand;
- surveying dairy NTMs in Russia and computing their impact on EU exporters' competitiveness;

- computing the trade impacts of dairy NTMs in China on European dairy exports.

The NTMs of the dairy case studies are quite different in both their scope and linkage to EU exports. Yet, the common thread between these case studies is the importance of the dairy export markets for the EU and the challenges noted by EU authorities and other exporting countries in these markets. Similar observations can be made for the two other trade cluster. The second product-trade cluster focuses on meat. Research efforts for this trade cluster include:

- an analysis of major exporters' welfare following changes in sanitary and phytosanitary measures for beef, with a particular focus on Argentinean vs European firms;
- estimating trade impacts of various non-tariff measures imposed by Australia on its imports of pigmeat;
- an analysis of changes in poultry meat exporters' welfare following changes in regulatory policy of Japan, Russia and China, India and other import markets

The third product-trade cluster is centered on fruits and vegetables. Research efforts related to this cluster include:

- assessing the impact of NTMs in the Russian market on the competitiveness of European exporters of fruit and vegetables;
- measuring the impacts of technical measures in world citrus markets affect the competitive position of Spain;
- analyzing the welfare effects of a change in EU and US SPS measures affecting lemon trade with a particular focus on Argentinean and European exporters;
- analyzing the effects of SPS and other NTMs related to apple trade on the competitiveness of European exporters

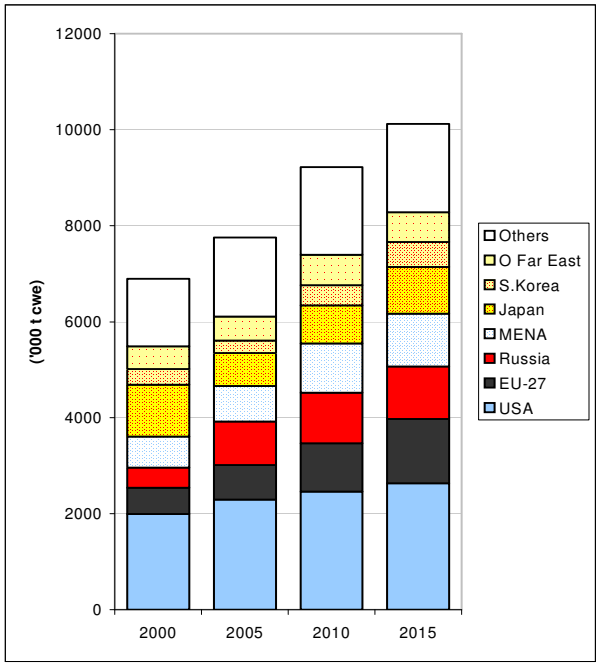
1- Case studies on meat (HS Chapters 02 and 16)

1.1 Argentina's case study on beef (HS 0201, 0202) – D. Iglesias, G. Ghezan, M. Cendon and G. Iturrioz

Lately, the increase in trade flows in the global meat sector followed the changes in the pattern of trade in agrifood. Regarding beef, the increase in international trade flows accelerated in the late 1990s, despite recurrent episodes of foot-and-mouth disease (FMD) and Bovine Spongiform Encephalopathy (BSE). These events triggered new quality standards and sanitary measures for bovine products.

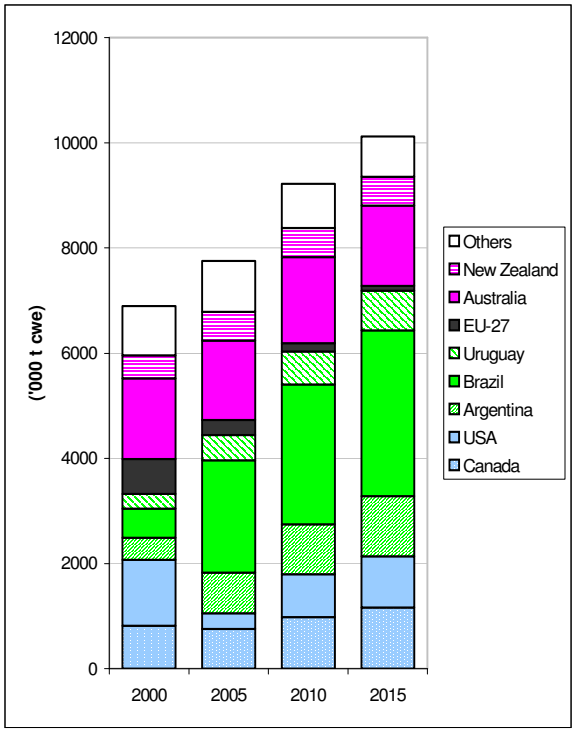
Today, the main producers and exporters are Brazil, Australia, Argentina, Canada, the EU, New Zealand, the United States and Uruguay. Recently, some of these countries such as Brazil and Australia managed to consolidate their leadership in the global beef market. The main importers are the United States, the EU, Russia, Japan, Korea and Mediterranean countries (Middle East and North Africa).

Figure 1 : Beef and veal importers (2000-2015, Incl. Live)



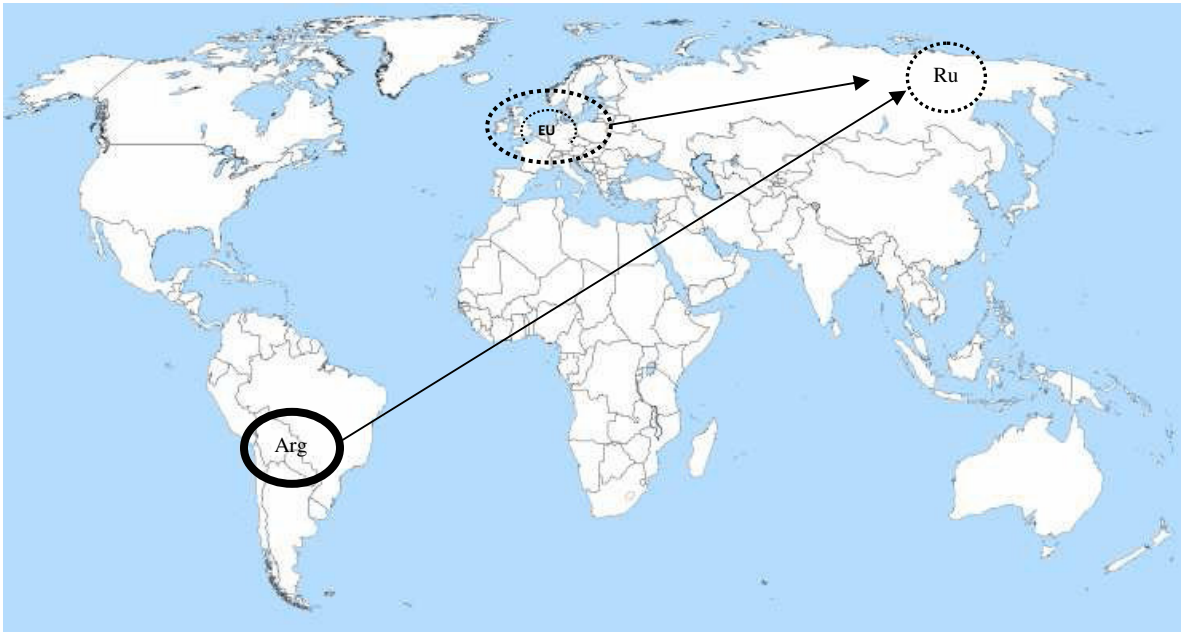
Source: GIRA 2008

Figure 2 : Beef and veal exporters (2000-2015, Incl. Live)



Source: GIRA 2008

Figure 3 : Argentina's beef trade cluster



Objective and research questions

The objective of this case study is to analyze how NTMs in beef markets affect the competitive position of Germany vis-à-vis Argentina in exporting frozen beef in the Russian market.
Particularly, the aim is to analyze the exporters' welfare effects of a change in the importers' regulatory policy with regard to Sanitary and Phytosanitary (SPS) beef requirements.
In the EU, Germany is one of the major producer of beef and the major exporter of frozen beef to Russia; and the Russian market is the major destination of Argentine beef export.

Justification for the Argentina's beef case study

In the EU, the domestic production was almost 8 million tons of beef with bone in 2007 and would reach 7.6 million in 2012; France and Germany are the main producers.

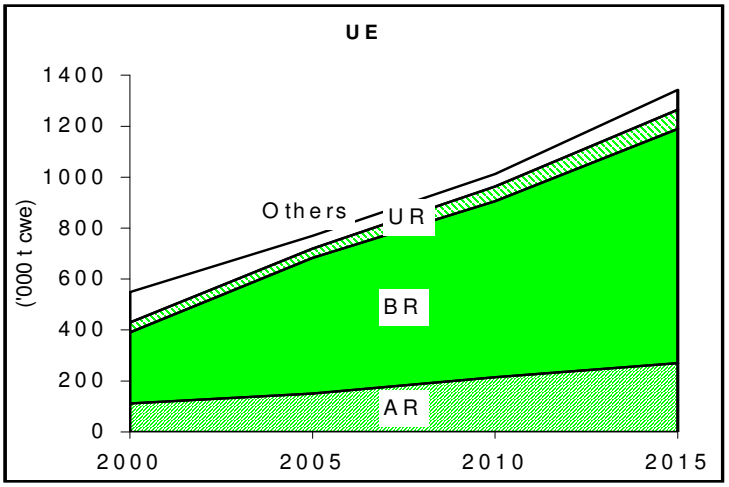
Table 1 : Top 5 EU member states' beef production, 1000 tons

	2008	2009	2010
France	1,490	1,500	1,490
Germany	1,210	1,165	1,150
Italy	1,059	1,036	1,022
United Kingdom	862	836	805
Spain	658	640	640

Source: USDA GAIN Report. 2009

The estimated imports were nearly 570 thousand tons in 2007 and would reach 713 thousand tons in 2012. Exports would be reduced by 65.5 thousand tons when compared 2012 to 2007 for a total of 59 thousand tons approximately. The domestic consumption would slip slightly, from 8.42 million tons in 2007 to 8.26 million tons in 2012.

Figure 4 : EU beef imports projections by country

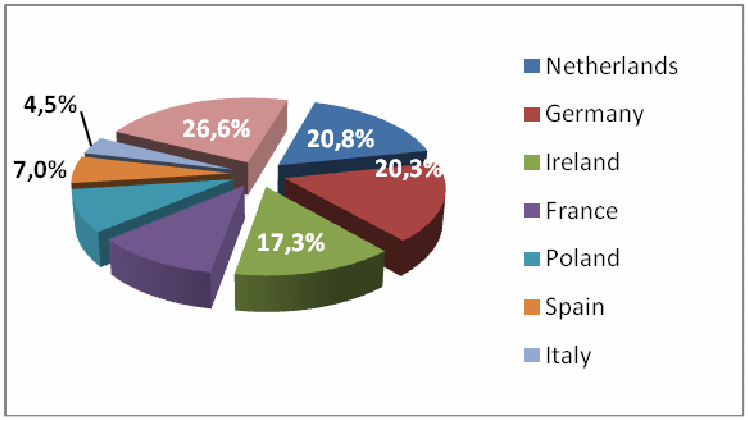


Source: GIRA 2008

The main destination of EU beef exports is the EU itself. Italy imports about 400 thousand tons each year (fresh or chilled meat) from other countries of the Union. Spain, Germany and Netherlands import 200 thousand tons a year.

The main exporters of beef in the community are Germany, Ireland and Netherlands (nearly 300 thousand tons each, per year), representing 58.4 percent of the yearly European beef imports (Figure 5). Argentina is one of countries that competed with them (extra block), selling 47 thousand tons per year, of high quality of beef.

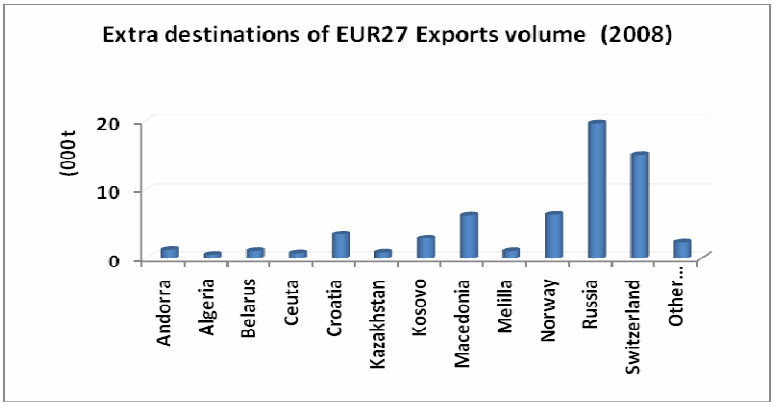
Figure 5 : Main intra-Community beef providers (2008)



Source: authors' own calculation based on Export Helpdesk.

European external sales of beef represent around US$ 188 million. The main buyer is Russia with 20 thousand tons per year (29 percent of the total). EU beef exports increased from 140 thousand tons in 2007 to 204 thousand tons in 2008. EU exporters benefited from a decrease in the Brazilian fresh beef supplies to Switzerland and an increased demand for frozen beef in Russia.

Figure 6 : Destinations of extra EU27 beef exports (fresh and chilled), 2008



Source: authors' own calculation based on Export Helpdesk

Table 2 : Top 5 EU member states' beef exports, 1000 tons

	2008	2009	2010
Germany	48	35	35
France	26	25	25
Italy	21	20	20
Poland	16	18	18
Benelux	20	15	15

Source: USDA GAIN Report. 2009

In Argentina the beef supply chain represents a total gross value of around US$ 8 billions. It is one of the most relevant agrifood chains of the country, after the soybean chain. The main target of beef production is the internal market (75 percent) with an apparent yearly consumption of 63 kg per capita. The second target is the beef export market (25 percent), which has reached a peak in 2005 with 771 thousand tons of beef.

In 2008, the number of cattle fell sharply compared to a year earlier due to adverse weather conditions (drought), a higher slaughter rate and to government policies that led to a shift away from ranching, including export limits and price controls.

Currently, Argentina exports about 17 percent of its production (282 thousand tons in 2009 see Table 4), and it is at the fifth and the sixth position of beef exporting countries. The main destinations for beef have been Russia with 141 thousand tons exported (half the total volume and one third in value). Chile is the second destination representing 16 percent in volume and value. The EU is in third position.

Table 3 : Argentina's beef market patterns

Periods	Total slaughtered	Carcass performance	Production	Exports	Domestic consumption	External consumption
	Million head.	Kg/head	1000 tons	1000 tons	1000 tons	Kg/person/yr
Averages						
1981-2008	12.89	213.7	2 755.6	400.8	2 354.8	69.5
´80s	12.85	210.3	2 701.7	377.1	2 324.6	76.3
´90s	12.71	214.8	2 729.4	378.2	2 351.2	67.4
´00s	13.22	217.2	2 869.9	466.9	2 403.0	62.8
2003-2007	13.88	217.2	3 015.0	553.6	2 461.4	63.7

Source: SAGPyA-SENASA

Table 4: Argentina's Beef exports by main destinations in 2009 (*).

	Hilton		Fresh meat		Processed meat	
Country	1000 tons	Mill. U$S	1000 tons	Mill. U$S	1000 tons.	Mill. U$S
Russia			141.3	337.4		
Germany	11.239	112.0	20.2	170.3		
Chile			44.2	155.1		
Israel			30.5	111.0		
Holland	5.0	48.1			3.2	10.7
Italy	3.8	39.6			2.8	14.4
US					9.7	48.7
UK	1.5	8.8			9.5	23.0

(*) Provisory information about first 11 months 2009.
Source: author's own calculation based on SENASA (2009).

Beef SPS measures

The measures that are thought to be the most important determinants of beef exports are Sanitary and Phytosanitary's (SPS) measures. They cover the following aspects:

i) Sanitary status and regionalization: The sanitary status is determinant in defining a market strategy, as it prevents for example the development of special cuts in countries that do not import fresh meat. Recent changes in trade regulations (WTO SPS agreement) allow countries with FMD to export to FMD-free markets if the exports originate in FMD-free regions, and if the disease is contained within a quarantine area. However, the two largest markets for American fresh meats and other animal products, Japan and Korea, do not recognize the regionalization principle yet. Argentina has two areas internationally recognized as free from FMD without vaccination: Patagonia and a zone from the Colorado River up to the northern boundary of the country has been classified as a country where the BSE risk is negligible. Conversely, countries such as the United States, Canada, Japan and Mexico do not accept fresh meat imports from Argentina unless it has been subjected to a heat treatment.

ii) Authorization of establishments and producing areas: a commonly imposed SPS is the authorization of slaughterhouses and producing areas. All meat shipments require a sanitary certificate issued by the sanitary services of both countries which usually consist of the product's name, the data of the establishment, the country of origin or the producer's name and address, the product's quantity and weight, additives etc.

iii) Shipments certification.

iv) Border inspection.

v) Traffic and internal compliance.

SPS barriers can result in significant costs of compliance for producers and exporters. A foreign SPS action can stop all imports of a product, resulting in major losses for the exporting industry. FMD-free status with vaccination imposes additional costs and loss of market share. Until recently, FMD-affected countries could not export live animals or unprocessed animal products

to countries free from the disease. Because of this restriction, the international beef market has been segmented into FMD-free and FMD-endemic markets. Since Argentina is a FMD-free country with vaccination, its beef had no access to the markets of the United States, Canada, Mexico, Japan and Korea South, which only imported from FMD-free without vaccination areas. Recently, the United States and Canada have relaxed their rules and currently allow imports from countries qualified as FMD-free with vaccination. Table 5 shows that countries with severe sanitary rules represented 35.5 per cent of world imports in 2003.

Table 5 : Share of major beef importers by level of restriction, 2003

Market type	**Mill. US$**	**%**	**1000 tons**	**%**
With severe permanent restrictions	4.1	35.5	1,498	26.5
Japan	*2.2*		*770*	
South Korea	*1.1*		*380*	
Mexico	*0.9*		*348*	
With severe temporary restrictions	3.3	28.6	1,534	27.2
U.S.A.	*2.7*		*1,261*	
Canada	*0.6*		*273*	
Others	4.2	35.9	2,616	46.3
U.E.	*1.3*		*476*	
Russia	*0.6*		*630*	
Others	*2.3*		*1,510*	

Source: Nogues J. 2006

1.2 The Impact of Nontariff Measures on Imports of Pigmeat into Australia (HS0203) – M. Melatos, J. Beghin

Objective and research questions

The objective of the Australian subproject is to analyze the impact of various non-tariff measures (NTMs) imposed by Australia on its imports of pigmeat (pork), taking into account the recent policy changes induced by a WTO dispute between Australia and some of its EU trade partners, most significantly Denmark (WTO, 2003). We describe the dispute in a subsection below

Justification for the Australian case study

Australian pigmeat imports provide an interesting NTM case study for a number of reasons. The quarantine regulations applied by Australia on pigmeat imports have been the subject of a recent (2003-2007) WTO dispute between Australia and the European Union. Denmark, a EU member state, played a central role in the WTO dispute. Denmark is consistently one of the three leading exporters of pigmeat into Australia along with Canada and the United States (USDA gain report 2008, and Figure7). As such, Denmark is likely to have felt the impact of the NTM regime changes that have occurred. In addition, current quarantine regulations allow EU members

Sweden and Finland to export pigmeat into Australia; apparently, none has been exported yet.

This case study is representative of Australia on two dimensions. It focuses on quarantine measures, the most important class of NTMs imposed by Australia on agricultural and food products. Quarantine regulations represent the only barriers to entry faced by importers. Australia levies zero tariffs on imported pigmeat, which is also typical of Australia's trade policy. Australia has low or no duties on most goods.

Pigmeat production and trade are important in EU agriculture as documented in Table 6. Several EU member states are competitive producers and exporters of high quality pigmeat/pork products. Denmark dominates in this role. The EU competes with Canada and the United States, and in recent years with Brazil in many third markets including Australia

Table 6 : Pork trade

	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Net Exporters											
(Thousand Metric Tons)											
Australia	8	5	28	21	5	-20	-49	-49	-87	-102	-97
Brazil	108	162	337	590	603	621	761	639	730	675	805
Canada	489	592	637	773	884	867	945	936	862	860	859
European Union	1,566	1,315	938	962	1,096	1,249	1,044	1,159	1,251	1,475	1,239
Other CIS †	4	9	24	10	-20	-16	-2	-6	-6	-6	-14
Thailand	582	335	244	0	0	0	0	0	0	0	2
United States	207	145	276	246	241	490	744	909	986	1,794	1,459
Total Net Exports *	3,007	2,584	2,566	2,692	2,980	3,616	3,914	4,097	3,981	4,804	4,368
Net Importers											
Argentina	64	65	61	13	38	31	22	23	32	39	44
China - Hong Kong	187	212	224	237	260	285	263	277	302	367	366
China - Mainland	-34	75	-53	-73	-132	-368	-403	-454	-152	282	172
Indonesia	0	1	0	0	0	0	0	0	0	0	0
Japan	874	946	1,021	1,107	1,090	1,269	1,314	1,153	1,210	1,248	1,184
Mexico	137	217	233	264	323	406	361	380	371	455	371
New Zealand	2	2	2	2	2	3	3	2	2	2	5
Other Eastern Europe ‡	7	14	7	10	7	15	8	13	13	13	12
Paraguay	0	0	0	0	0	0	0	0	0	0	-4
Philippines	36	27	25	31	22	24	23	24	25	54	37
Russia	588	288	491	799	707	613	751	834	893	939	837
South Korea	44	152	88	142	128	215	329	396	434	444	450
Taiwan	72	44	11	23	41	50	33	23	16	19	15
Ukraine	-2	-9	0	0	-7	48	51	59	80	140	71
Vietnam	-7	-11	-29	-17	-12	-21	-17	19	6	39	34
Rest of World	996	541	403	64	342	620	704	840	504	656	659
Total Net Imports	3,007	2,584	2,566	2,692	2,980	3,616	3,914	4,097	3,981	4,804	4,368

* Total net exports are the sum of all positive net exports and negative net imports.
† Countries included: Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova Republic, Tajikistan, Turkmenistan, Uzbekistan.
‡ Countries included: Albania, Bosnia and Herzegovina, Croatia, Macedonia, Yugoslavia.

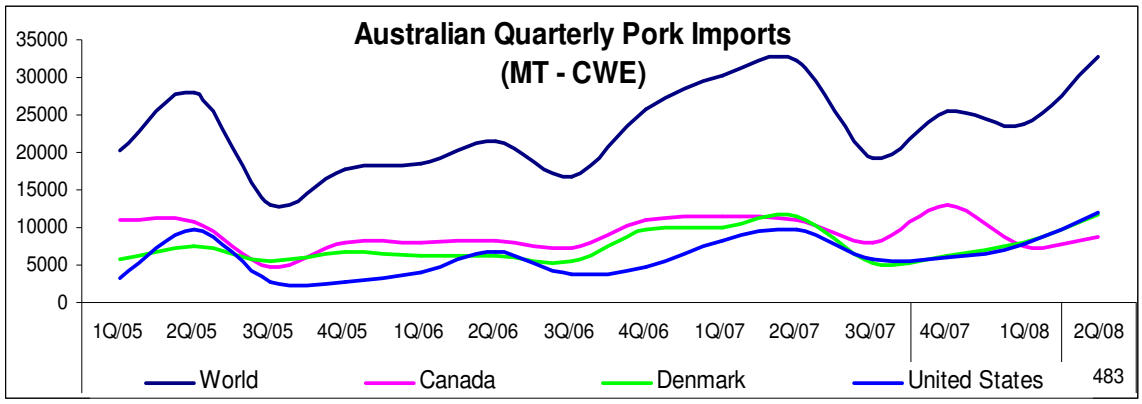
NTMs and Australian pigmeat imports

Many factors, apart from NTMs, can influence the volume of pigmeat imports as well as their source: input cost changes affecting meat cost (e.g. feed and labor costs for live animals), exchange rate changes, prices of substitute products (e.g. chicken, mutton, beef etc), market structure (size and vertical integration), genetics technology and producer switching between different market segments. Our aim is to identify the impact of NTMs on pigmeat imports.

Imports of pigmeat into Australia are growing (Figure 7 and Figure 8, and p. 18, Productivity Commission Report, USDA Gain reports). This reflects not just the change in quarantine regulations, but also the long-standing and acute drought that has stricken Australia, as well as

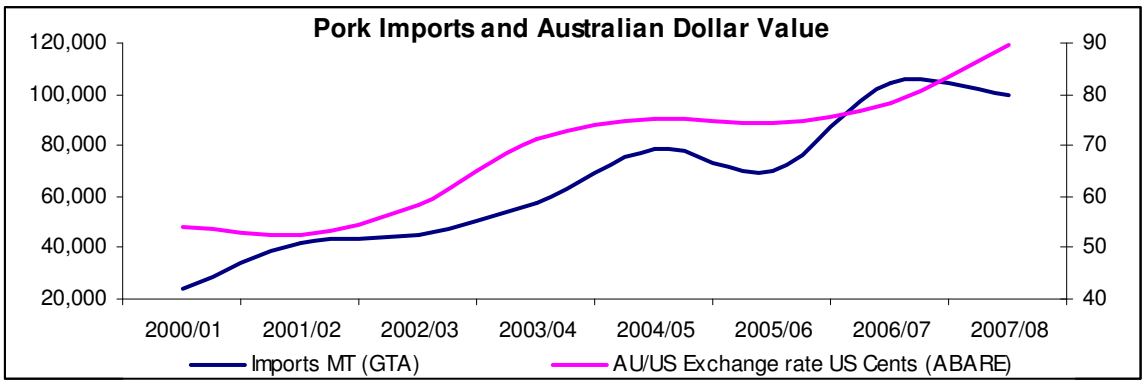
the appreciation of the Australian dollar vis-à-vis the US dollar and to a lesser extent, the Euro and Canadian dollar. Given the considerable variation in domestic market conditions, exchange rates and SPS regulations, these variations should presumably be reflected in the trade data.

Figure 7 : Pigmeat imports into Australia



Source: USDA Gain Report

Figure 8 : Us imports and exchange rate changes



Source: USDA Gain report

The nature of the quarantine regime regulating the import of pigmeat into Australia has undergone *significant* and *regular* changes over time (p.4, Productivity Commission Report). These changes have often been bilateral, that is, country specific. This variation in NTM regime over time on a bilateral basis should help overcome limitation of SPS analysis purely based on cross-sectional variation often confounded with bilateral fixed effects. This variation is also useful because it permits the analysis of the impact of different NTM regimes on a particular importer and of a particular NTM regime on different importers.

Currently, the United States, Canada, and Denmark are the source of almost all imports of pigmeat into Australia. There has been great variation in the market shares of these importers over time (p. 6, Productivity Commission Report). This stylized fact should make it easier to more accurately identify any country-specific and regime-specific impacts. Moreover, different

importing countries tend to specialize in different types of cuts: Denmark (mainly middles for bacon), Canada (mainly legs and shoulders for ham) and the United States (mainly shoulders and legs). The fresh pork market and small goods markets for "ham-on-the-bone" and uncooked salami are supplied entirely from local production. Therefore, country-specific NTMs may in fact be "product-specific"; this could influence the composition of consumer demand.

The level of government support seems to be quite similar across the countries involved, although the EU has been using export subsidies in 2004. OECD Producer Support Estimates (PSE) for pigmeat producers are similar for Canada, the United States, Australia and Denmark (p.34, Productivity Commission Report). This farm policy situation reduces the chance that observed NTMs are being implemented for strategic or retaliatory reasons. The 2007 industry request for safeguard duties was denied by the Australian government in 2007, despite a palpable stress imposed on the industry via expensive feed and decreased competitiveness on world market because of the appreciating Australian dollar. We note however that in 2007, the EU re-introduced pigmeat export subsidies, which probably have further decreased the competitiveness of Australian producers.

Policy Background

Variation in quarantine regulations on pigmeat imports

- **Pre-1990:** no imports permitted except for canned hams.
- **May 1990:** imports of uncooked pigmeat allowed from N.Z.
- **July 1990:** imports of uncooked (frozen) pigmeat allowed from Canada.
- **Late 1992:** uncooked (frozen) pigmeat from Canada must also be boned prior to export and processed on arrival under quarantine control.
- **May 1996:** unfrozen pigmeat allowed from Canada if it is boned and cooked on arrival under quarantine control.
- **November 1997:** Uncooked, boneless pigmeat allowed from Denmark if it is processed on arrival under quarantine control.
- **November 1997:** Imports of cooked and boneless pigmeat permitted from Canada.
- **From 2004**, imports from anywhere permitted provided appropriate risk management undertaken (this is defined on a country-specific basis). We have collected the information on each country requirement to be able to export to Australia.
    - **May 2004:** Frozen, cooked, boneless pigmeat from Denmark allowed if major peripheral lymph nodes removed.
    - **May 2004:** Same policy for Canada and the United States. The meat must be processed on arrival under quarantine control.
    - **July 2004:** Cooked, boneless pigmeat from the United States permitted provided that major peripheral lymph nodes removed. Finland and Sweden are also permitted to import currently, but do not.

The WTO dispute

In April 2003, the European Commission requested consultations with Australia regarding the Australian quarantine regime for imports of pigmeat. This consultation is a necessary first step in the dispute mechanism. The EC complained that the Australian quarantine regime for imports

appeared to be discretionary and arbitrary because it was left to the discretion of a Director of Quarantine. More importantly the absence of risk assessment made the a priori ban in imports suspect, because it lacked scientific basis. The Australian approach is to delay risk assessment until the import of a product has been specifically requested. In some cases, no risk assessment has been commenced despite such request. The EC request for consultation claimed that in 2003, Australia permitted the import of deboned pigmeat from Denmark for processing in Australia but not of processed deboned pigmeat from Denmark. Processing requirements imposed in Australia to protect Australia from PRRS (Porcine Reproductive and Respiratory Syndrome) were claimed to be too restrictive. Requests for market access to Australia for processed pigmeat or deboned pigmeat from other EU Member States were turned down.

Several countries requested to join the consultations: Canada, Chile, India, and the Philippines. In August 2003, the EC requested the establishment of a panel, which was initially deferred but eventually accepted by the WTO. The Dispute Settlement Body (DSB) established a panel at its meeting on 7 November 2003. Canada, Chile, China, India, Philippines, Thailand and the United States reserved their third-party rights.

In 2004, Australia's AQIS issued a draft import risk analysis on pigmeat which clarified many of the contentious issues between all countries involved in the dispute. This import risk analysis was finalized and became the basis of current quarantine regulations on pigmeat imports.

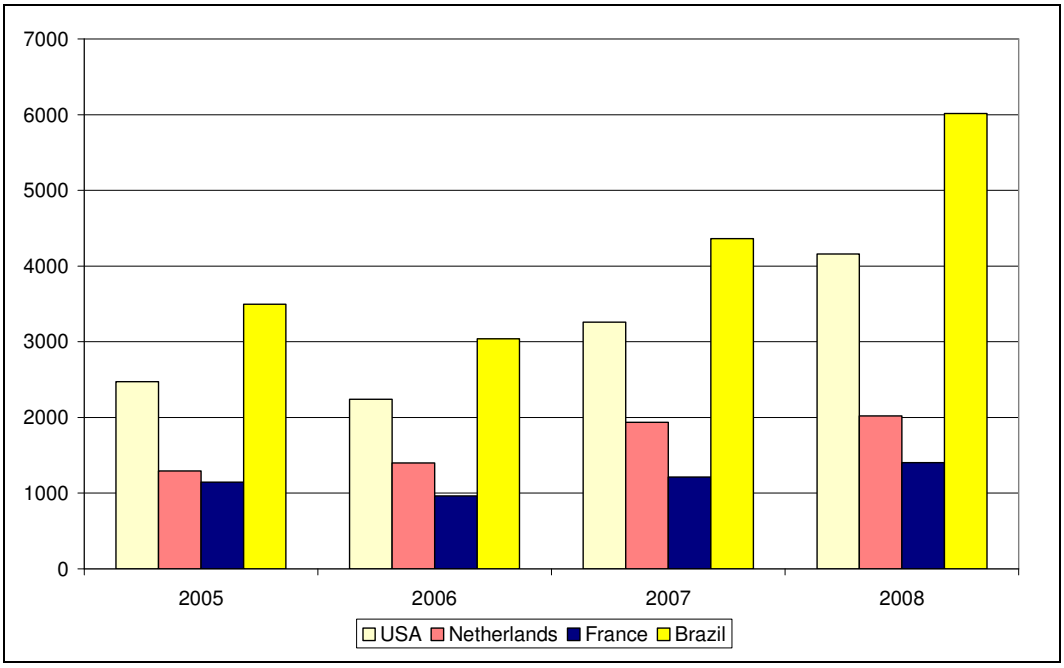
In March 2007, Australia and the European Communities notified the DSB that they had reached a mutually agreed solution to address the issues identified by the European Communities, while providing appropriate level of protection of Australia and consistent with Australia's SPS legislation and import policy development process.

1.3 Case study on poultry trade in Japan and Russia (HS 0207 and 1602 -31, -32, -39) – T. Heckelei, S. Schlueter and C. Wieck – F. Kimura and T. Otsuki

Justification for the poultry trade case study

Given the growing importance of poultry meat in international trade (Figure 9), many countries implement drastic measures to restrict trade in poultry meat associated with a perceived or actual risk of transferring a pest or disease into their territory. These regulations may lead to questionable impediments to imports that compete with domestic products. When the possibility of a disease or pest transmission is very low or threat to food safety is negligible, these trade impediments cause welfare losses for importing countries and mercantilist losses ("injury" in WTO language) for exporting countries due to reduced exports.

Figure 9 : Global exports of poultry meat (Chapter 02) in millions of US dollars, selected countries



Source: UN COMTRADE

NTMs affecting poultry trade

Analyzing the trade concerns on poultry raised in the SPS Committee of the WTO, potential cases of measures being implemented despite of a low possibility of disease transmission can be identified. Of the 21 raised concerns on poultry meat, 12 were on avian influenza (AI) issues, whereas 3 were on microbiological contamination and on other infectious diseases, respectively, and one trade concern was on Maximum Residue Limits (MRL), antimicrobial treatment, and other issues, respectively (see Table 7).

Table 7 : Specific trade concerns raised in the SPS Committee

specific trade concern	number	percentage
avian influenza	12	57%
microbial contamination	3	14%
other infectious diseases	3	14%
antimicrobial treatment	1	5%
MRL	1	5%
other	1	5%
all	21	100%

Source: own calculation based on WTO SPS-IMS

Looking at the AI cases, most often the complaint of the exporting country is that the importing country imposes NTMs which are disproportional to the associated risk and not based on OIE

guidelines. For example, in October 2007 China raised concerns that the European Communities and the United States had suspended the importation of cooked poultry meat from China because of the presence of highly pathogenic avian influenza in China. The import ban was implemented in spite of the OIE guidelines on avian influenza which explicitly state that heat treatment de-activated the virus and that restricted measures associated with AI should not be applied to cooked poultry meat (WTO 2009). Another example is the concern of the European Communities on Indian's import ban on European live birds, fresh poultry meat and meat products due to avian influenza. The EC argued that these measures were disproportionate to the health risks associated with imports from the EC as it was free of highly pathogenic avian influenza. Within the discussion on India's import measures the OIE clarified that findings of avian influenza in wild birds and of low pathogenic notifiable avian influenza (LPNAI) should not lead to import bans and that there needed to be a distinction drawn between reporting and the imposition of measures. The listing of diseases such as high pathogenic avian influenza (HPAI) and low pathogenic notifiable avian influenza was first and foremost for disease reporting purposes and related to the question of transparency (WTO, 2009).

Objective and research question

Sanitary and food safety concerns stemming from animal disease outbreaks have limited the growth in trade for meat exporting countries affected by trade bans. The objective of this case study is to analyze the exporters' welfare effects of a change in the importers' regulatory policy with regard to avian influenza. The case study differentiates between two scenarios: (1) the implementation of an alternative regulatory policy to a ban in the case of low pathogenic notifiable avian influenza having a proportional risk mitigating effect; and (2) the implementation of an alternative regulatory policy to a ban in the case of high pathogenic avian influenza having a proportional risk mitigating effect.

To analyze the competitiveness of European poultry meat producers in terms of their potential to export, the welfare and trade effects of a change in import policies of two major importers - Japan and Russia – on four important poultry meat exporters – EU, Brazil, the United States, and China - are compared among each other.

Poultry meat cannot be assumed to be homogenous as it has to be differentiated between meats originating from sources being free of AI, from sources with LPNAI, and from sources with HPAI. Additionally the study differentiates between cooked and uncooked meat, as the OIE differentiates between both product groups when defining the appropriate measures to mitigate the spread of avian influenza. Thus there are six meat categories listed in Table 8. The green cells indicate that the guidelines of the OIE do not foresee any trade restrictions for these meat categories. The red cell indicates that trade measures are justified.

Table 8 : Meat categories

	Cooked meat	Uncooked meat
Source free of AI	**Meat category 1**	**Meat category 2**
Source with status LPNAI	**Meat category 3**	**Meat category 4**
Source with status HPAI	**Meat category 5**	**Meat category 6**

Source: own compilation

Food safety threat and Japanese SPS measures on poultry

Sanitary and Phytosanitary regulations have been implemented to ensure the health of animal, plant and human beings of countries engaged in trade. Such regulations take various forms such as a ban, tariffs, standards and other technical requirements, and their specifications often follow their domestic regulations. In Japan, the government enacted the Food Sanitation Act in 1947 and the Plant Quarantine Law in 1950, the Domestic Animal Infectious Diseases Control Law in 1951, and those SPS rules have implemented both domestically produced and imported foods. The discordance between the Japanese SPS regulations and those of its trading partners has sometimes caused major contentions.

Recently, the incidence of avian influenza has led to trade ban on poultry and poultry meat imports to Japan from infected countries including most of the European and Asian countries. Japan announced a ban against South Korea and France in 2006 and against most of the rest of the European countries by 2009. Japan had imposed the import ban indiscriminately against high and low pathogenic type influenza until 2006. The import share of traditional exporters to Japan such as China and Thailand substantially dropped in the last decade due to the incidence of avian influenza whereas the share of Brazil which is infection-free has grown rapidly. In 2006 Japan agreed to lift the ban from uninfected regions of a country which was categorized as low pathogenic according to a France's request. Despite this change in regulatory regime, this region-base scheme has been applied to only France, the United States, and Mexico. Also, scientific fact has not yet been provided for the risk of importation of poultry meat from infected countries for consumers and producers, and therefore, the import ban on poultry meat does not have justification. Thus, if the Japan's regulations are to be adjusted according to the region-wise scheme for the low pathogenic countries, export loss may be contracted. The benefit of the region-wise scheme would be substantial for the European countries as Japan is one of the dominant markets for their poultry meat export, and most of them are categorized as low pathogenic.

Furthermore, the lasting Brazil's dominance in the share in Japan's poultry meat imports indicates possible persistence of negative reputation impact on their consumption of the ex-infection countries since the incidence of the infection. Also, consumers concern about safety of imported foods may be triggered by the food safety threat, and they continued to be reluctant to purchase foods from the infected countries. Therefore, recovery of the import from the ex-

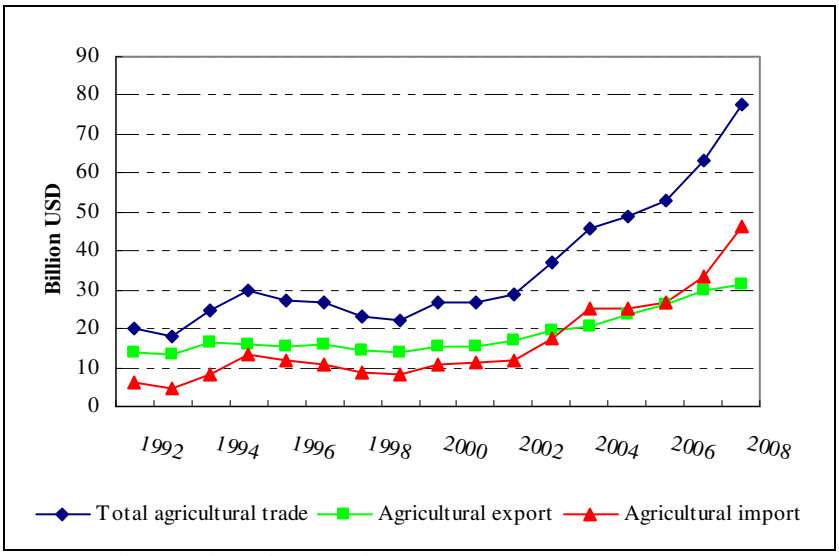
infection countries may take a substantial time after the elimination of the ban, and they tend to continue to purchase domestic meat and imported meat from countries with no infection history. Also, consumers tend to have strong preference toward the competing domestic products.

1.4 Rationale behind the selection of the poultry case study in China (HS 0207) – J. Yang and J. Huang

Justification for the Chinese case study

China's agricultural trade has grown rapidly after its WTO accession in 2001. As shown in Figure 10, China's agricultural export increased from 15.4 billion USD in 2001 to 31.5 billion in 2008, rising by 104 percent.[1] Meanwhile, the import grew much faster from 11.3 billion in 2001 to 46.1 billion in 2008, increasing by 307 percent. Due to a much faster growth rate of import than export, China's agricultural trade position has shifted from net exporter to net importer since 2004. The deficit reached 14.6 billion in 2008 (Figure 10).

Figure 10 : Chinese agricultural trade 1992-2008 (in 2000 price)



Source: authors' calculation based on UNCOMTRADE

As shown in Table 9, China's agricultural imports are quite concentrated on a few major commodities. For example, the largest importing agricultural commodity is soybean, which accounted for almost half (44 percent) of total agricultural import in 2008. However, it is also notable that the import of certain high-value agricultural commodities (e.g., animal and dairy products, high-quality grape wine) also account for large shares and their imports grow rapidly. Moreover, imports of these commodities are expected to rise in the future as the domestic demand will increase with the rise in per capita income in China. For example, there are 7 animal and dairy products and 1 processed food (HS 1901) in the list of top 15 commodities, which accounts for 15.7 percent of total agricultural import (Table 9).

[1] The statistics presented in this note exclude Hong Kong, Macao, and Taiwan.

Table 9 : China's imported agricultural commodities top 15 in 2008

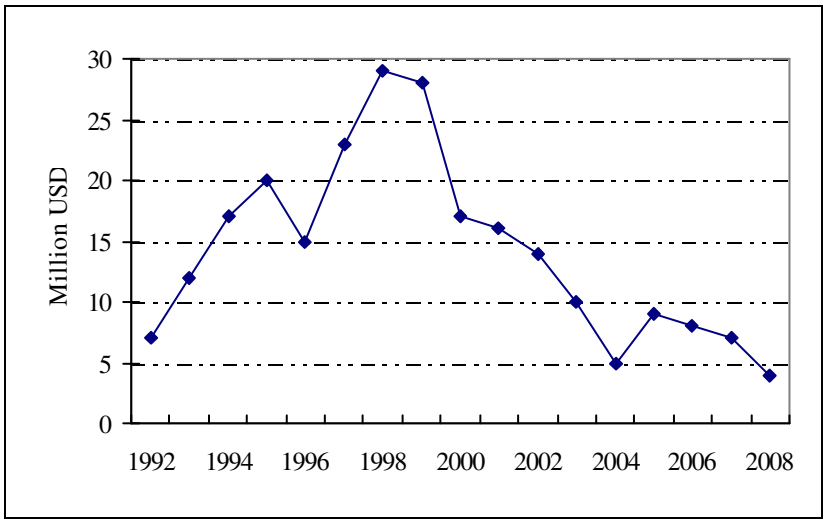
HS Code (4 digit)	Description	Million US$	Share in total agricultural import (%)
1201	Soybean	21,815.3	44.0
1511	Palm oil	5,212.5	10.5
1507	Soybean oil	3,333.7	6.7
0303	Fish, frozen, excluding 0304.	2,729.2	5.5
2301	meat or meat offal of fish	1,436.3	2.9
0207	Meat and edible offal, of the poultry	1,087.7	2.2
1205	Rapeseeds	754.4	1.5
2208	Undenatured ethyl alcohol	658.7	1.3
1513	Coconut, palm kernel or babassu oil	594.9	1.2
1901	Food preparations of flour	580.5	1.2
0206	Edible offal of bovine	567.8	1.1
0203	Meat of swine, fresh, chilled or frozen	523.5	1.1
1003	Barley	484.3	1.0
0307	Molluscs	472.1	1.0
0402	Milk and cream	401.4	0.8

Source: UNCOMTRADE

Agricultural trade between China and EU is growing rapidly and the Chinese market is getting more and more important for EU agricultural exports. Exports of agricultural commodities from the EU to China have increased from US$ 636 million (evaluated at 2000 prices) in 2001 to US$ 2.196 billion (evaluated at 2000 prices) in 2008, with an average annual growth rate of 19%. In 2008, the EU became the fifth largest exporter of agricultural commodities to China. The importance of China's market for EU agricultural exporters has risen from the twelfth position in 2001 to the seventh in 2008. Considering the continued growth of the Chinese economy, it could be expected that the importance of Chinese market for EU will increase further in the future.

Imports of poultry products in China increased from 1992 to 1999, but have started to fall since 2000 (Figure 11). Trade of high value-added animal products, often faces NTMs. EU's poultry exports to China have raised questions on what are major determinants of China's import of high value-added animal products and what are the likely impacts of NTMs on EU's export of agri-food products to China.

Figure 11 : China's imports of poultry products (HS 0207) from the EU, 1992-2008 (2000 price)



Source: UN COMTRADE

Objective and research question

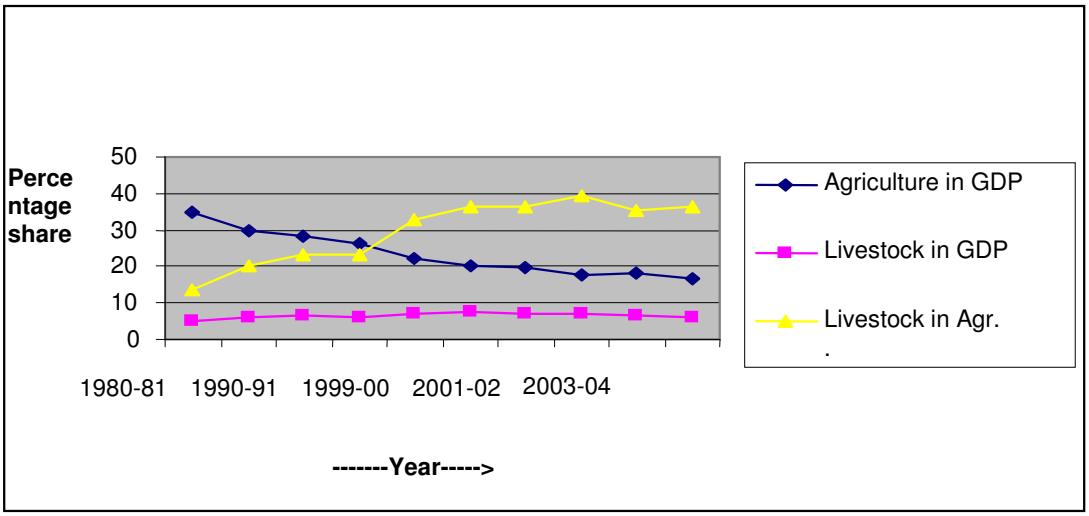
Critical issues on NTMs include the following four sets of questions.

- What kinds of NTMs have been adopted to regulate the import of poultry products? Do they differ between dairy and poultry products?
- How have these NTMs been implemented for poultry products?
- Have these NTMs significantly affected the import of poultry products? Especially, was the recent decline in poultry export from EU to China mainly due to loss of EU's competitive position in China's poultry market or due to changes in China's NTMs?
- What are the competitive positions of major poultry products providers in China, (e.g. EU, New Zealand, Australia and United States)?

1.5 India's case study on poultry meat and eggs (HS 0207, 0407) – R. Mehta

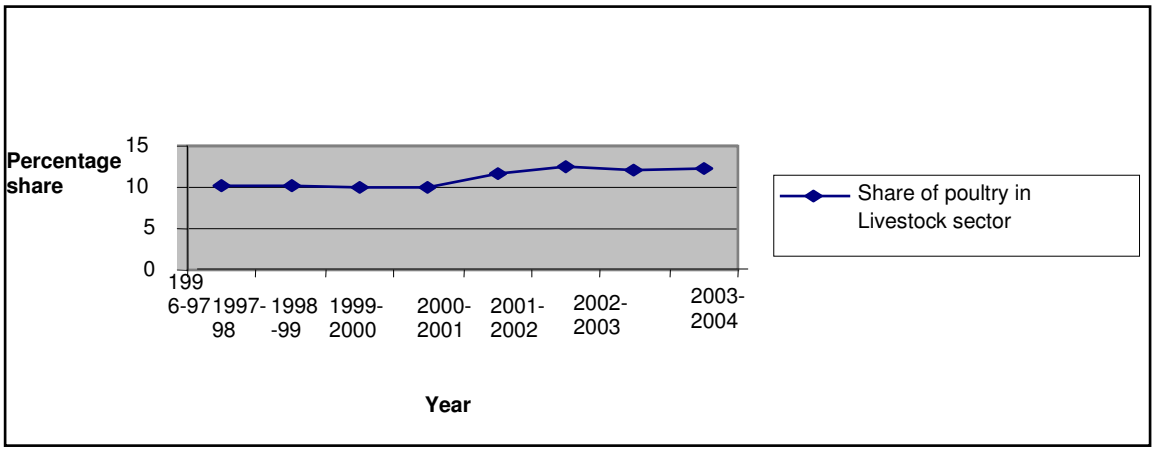
Livestock is one of major growing sectors in India. The share of livestock in GDP has been 4.8 percent in 1980-81, based on official statistics. Between then and 2000-01, the share rose to 7.33 percent; but then dropped to 6.10 percent in 2004-05. The livestock sector gaining prominence can also be seen if we look at the relative share of this sector in the agricultural sector - it was 13.8 percent in 1980-81, and then moved to 36.51 percent in 2004-05, i.e. out of every three units produced in agriculture, one unit of output and even more comes from the livestock sector. Figure 12 below exhibits the structural changes affecting the Indian economy at large.

Figure 12 : India's share of agriculture and livestock in GDP



The relative share of poultry in the livestock sector is on a continuous ascending. This can be seen from Figure 13. The relative share of poultry in total livestock is lifted up from 10 percent in 1996-97 to 12 percent in 2003-04. Poultry industry is seen to have grown at the rate of around 14 per cent per annum, during 1994-2005.

Figure 13 : India's share of poultry in livestock sector



Poultry meat is today the major source of meat in India. Its share in total meat consumption during 2004 was 28 percent as against 14 percent during 1995. In 2004, the total consumption of poultry meat was 1.7 million tons.

India consumed 44 billion Eggs during 2004-05. Most of this is produced in India. India is the world's 5th largest producer of eggs. Egg and egg-based products account for 90 percent of

India's poultry exports. Exports of hatching and table eggs have increased dramatically – from Indian Rupees (IR) 196 million in 1996-97 to IR 408 million in 2005-06. Similarly, exports of egg powder have increased from IR 351 million in 1996-97 to IR 1126 million in 2005-06. Exports of egg powder fell drastically between 1997 and 2000 because of the ban imposed by the EU on egg powder imports from India, but have started to recover in 2001.

Objective and research question

However, in spite of a significant growth in consumption and production during the last 25 years, the amount of India's level and growth of import and export of poultry meat, eggs and their based products is negligible. It can be due to (i) competitive advantage of India vis-à-vis principal trading partners, (ii) trade restrictive measures, e.g. tariff and non-tariff measures, of India, and/or (iii) trade restrictive measures of principal trading partners.

The main objective of this case study is to understand the implication of different NTMs (particularly SPS standards) on exporter's welfare of the EU and India. This will be carried out for (i) poultry meat, and (ii) egg and egg-powder. The emphasis will be given on cost competitiveness, and trade foregone for exporters. The country coverage can be extended to other competitive/trading partners like the United States, Australia, etc.
In particular, this case-study will concentrate on

(a) Identification of different types of SPS standards imposed by India, the EU, the United States, Australia, etc.
(b) An index of SPS standards of Poultry meat and egg-powder of above mentioned countries using methodology developed by Mehta et al.(2005),
(c) Impact of food safety standards on poultry exports from EU and other countries. This will be carried out by a partial equilibrium model.

1.6 Assessment of technical and sanitary norms and regulations upon poultry trade flows for the EU-27 and Brazil – H. Lee Burnquist, M.J. Pinto de Souza and L. Meneguelli Fassarella

Justification of the case study

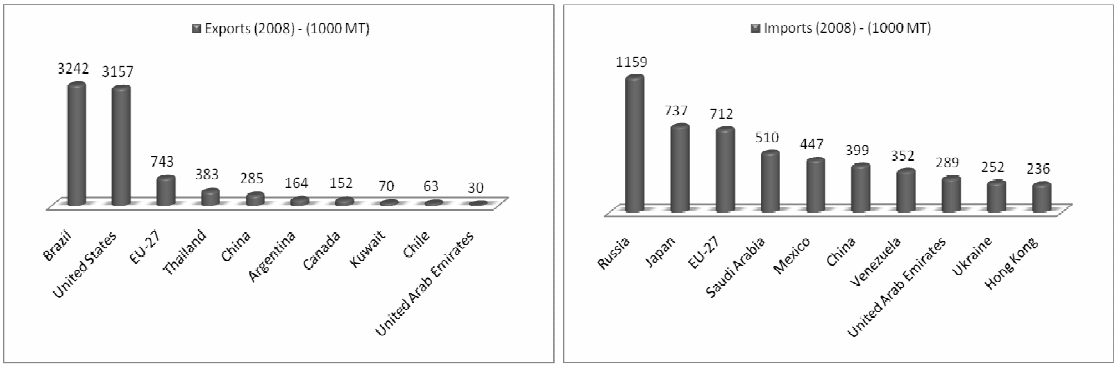
Poultry meat has been chosen for this case study given its relative importance for the Brazilian and European agri-food trade as illustrated in Figure 14. In fact, the poultry sector has been one of the most dynamic meat sectors through the last decade, presenting the largest growth of world consumption and production of all meat categories. At a global level, total poultry consumption and production (all species) increased from 66 million tons in 1999 to 85.6 million tons in 2009, corresponding to an annual increase of 2.7 percent (USDA; 2010). Trade experienced a 6.2 percent annual increase in the same period, from 3.7 million tons in 1999 to 6.7 million tons in 2009 (FAPRI; 2009). These results were achieved despite recurrent consumers' scares and trade restrictions due to disease outbreaks such as avian influenza, which represented a major threat for the poultry sector worldwide.

In addition, poultry meat trade has been frequently subject to technical and sanitary norms and regulations introduced by governments of several developed and developing countries in economic contexts of market failures, where the price mechanism is unable to balance supply and demand, such that government intervention is required. The introduction of new norms and regulations may also be driven by disease outbreaks as well as increased consumers' and producers' awareness of risks associated with food products. New requirements may be as diverse as temperature control, regulation for salt content, inspections, conformity analysis, certifications, issues related to contamination such Salmonella spp, Listeria, monocytogenes, Nitrofuran, Nitrofurazone, religious patterns etc.

Empirical analysis has shown that the introduction of technical and sanitary requirements can result in major rearrangements in the international market. However, the effect of these standards and regulations upon trade is unclear *a priori*. Regulations might present either positive or negative impacts upon trade (Schlueter and Wieck; 2009; Moenius; 2004), being conditioned by factors such as information content, for example. The present analysis will explore evidence presented by Moenius (2004), which is considered appropriate to evaluate the importance of agri-food standards and regulations in shaping chicken meat trade for Brazil and the European Union.

An overview of exports and imports of poultry meat shows that Brazil is among the major world exporters, followed by the United States and the European Union in 2008. Russia, Japan, the European Union and Saudi Arabia are the main importers (Figure 14).

Figure 14 : Poultry exports and imports, by country 1000 tons



Source: USDA 2010

Brazil has presented a positive performance in the world poultry market being currently responsible for 40 percent of total world exports, (3.6 million tons and US$ 6.9 billion). Brazilian poultry have been shipped to more than 50 countries between 2007 and 2008. Despite of this relative wide number of importers 48.6 percent of the total volume is concentrated in the 4 largest importers of Brazilian poultry see Table 10. European Union represented 14.6 percent of the total in 2008.

Table 10 : Top 10 destinations of Brazil poultry exports, 2008

Country	Quantity (1000 tons)	Share
EU - 27	530.75	14.6%
Japan	422.18	11.6%
China, Hong Kong SAR	415.27	11.4%
Saudi Arabia	400.37	11.0%
Venezuela	316.62	8.7%
United Arab Emirates	208.42	5.7%
Kuwait	163.63	4.5%
Russian Federation	158.87	4.4%
South Africa	147.36	4.0%
Singapore	75.63	2.1%

Source: UN COMTRADE

A look at the structure of the market is useful to understand the strategic importance of the EU market for Brazilian poultry exports (Table 11). Chicken cuts shipments registered 1.9 million tons in 2008. The main importing countries of this segment were Japan, Hong-Kong, the European Union, South Africa and Russia. Whole chicken exports from Brazil have been concentrated in the Middle East (Saudi Arabia, United Arab Emirates, Yemen and Kuwait) Venezuela, Russia and Angola. The main market for processed and salted chicken is the European Union.

Table 11 : Brazilian chicken exports by product (1000 tons), 2008

	World	EU - 27
Whole	1,336.46	16.64
Cuts	1,931.42	173.66
Processed	168.76	132.58
Salted	208.88	207.87

Source: UN COMTRADE

Imports from the EU-27 (excluding intra-bloc trade) reached 744 thousand tons which is equivalent to exchange revenues of US$ 1.14 billion in 2008. The 10 major poultry meat buyers from the European Union are classified in Table 12 in terms of their relative volume of imports. Brazil and the European Union compete for shares in Russian, Saudi Arabian and Chinese markets. The structure of the European poultry market shows that, as for Brazil, chicken cuts predominate (Table 13).

Table 12 : Top 10 destination of EU's poultry export, 2008

Country	Quantity (1000 tons)	Share
Russian Federation	143.15	19.2%
Saudi Arabia	94.60	12.7%
Ukraine	83.61	11.2%
Benin	58.96	7.9%
China, Hong Kong SAR	40.84	5.5%
Viet Nam	32.60	4.4%
Ghana	28.80	3.9%
Yemen	26.64	3.6%
United Arab Emirates	25.57	3.4%
Switzerland	18.80	2.5%

Source: UN COMTRADE

Table 13 : European chicken exports by product (1000 tons), 2008

Chicken	Quantity	Share
Whole	269.24	36.2%
Cuts	436.34	58.6%
Processed	31.23	4.2%
Salted	7.20	1.0%

Source: UN COMTRADE

In summary, market information indicates that Brazil and the EU are major exporters in the poultry global trade and compete in relevant importing markets, such as Russian Federation and Saudi Arabia, among others. This information was fundamental for establishing the objectives and formulating research hypothesis to be addressed in this case study.

Objective and research question

The major purpose of the research is to evaluate the importance of agri-food regulations and standards in shaping poultry trade for Brazil and the European Union, assuming that the current strategic position assumed by these players in the world poultry market can be significantly affected by these measures. Research question is twofold:

1. What are the sanitary and technical requirements (norms and regulations) imposed by countries importing poultry from Brazil and the European Union that may potentially affect their relative competitiveness?

2. How do sanitary and technical measures affect access of Brazilian and EU poultry to relevant international markets?

To answer the first question, a broad survey of SPS and TBT notifications to WTO will be conducted, considering information from public and private national institutions involved with import and export. Requirements will be classified and organized according to MAST (2008), observing the objective of the notification, such as: 1) Food safety; (2) Animal health; (3) Plant health; (4) Protect humans from animal/plant pests or diseases. An inventory approach will be applied (count measure: frequency and coverage ratios).

To evaluate how the sanitary and technical measure (public and private) affects market access of Brazil and the EU, two gravity type equations will be estimated, using the Anderson and van Wincoop (2003, 2004) approach and the methodology proposed by Silva and Tenreyro (2006). Gravity equations will be included as well as conventional variables such as tariffs, sanitary and technical measures, classified and analyzed according to MAST (2008) (Item 1). This approach is similar to Disdier et al. (2008); Karov et al. (2009); Schlueter and (2009); Burnquist and Souza (forthcoming).

2 - Case studies on dairy (HS Chapter 04)

2.1 The Impacts of Canadian Cheese Compositional Standards on the Competitiveness of Dairy Exporting Firms (HS 0406 -10, -20, -30, -40, -90) – J.P. Gervais, B. Larue and M-H. Felt

Objective and research question

This case study will focus on recent modifications to regulations on compositional standards of cheese in Canada. The objective is to analyze the impacts of these regulations on the competitiveness of exporters in the Canadian market. The new compositional standards for cheese were issued by the Canadian government in December 2007. The stated objective of the changes in regulations was to "guarantee the integrity and quality of Canadian cheese for consumers". The regulations amending the *Food and Drug Regulations* (FDR) and the *Dairy Products Regulations* (DPR) came into force in December 2008. In essence, the new regulations require that cheese products derive a minimum amount of its casein from fluid milks and ultra-filtered milks rather than from other milk products, as well as have a whey protein to casein ratio that does not exceed that of milk. In addition, the casein content derived from milks must meet or exceed the percentage of the total protein content for a given cheese variety. Changes to the DPRs also introduced new cheese import requirements. All cheese importers now need a cheese import license issued by the *Canadian Food Inspection Agency* (CFIA) as of December 14, 2008. Canada officially notified the WTO of these changes through the Agreement on Technical Barriers to Trade Agreement

These new standards raise a number of important issues which can be sorted out according to whether they are Canadian dairy stakeholders or foreign suppliers. Canadian dairy producers have been overwhelmingly in favor of the changes to the existing regulations. Due to technological advances in dairy processing, ingredients from milk or dairy by-products (whey, buttermilk) are increasingly used in food products for their nutritional technological properties. The demand for dairy ingredients has grown considerably in Canada. Under previous rules, Canadian dairy processors would use the domestic milk fat content and import dairy proteins at a lower price than on the domestic market, reselling to producers non-fat milk solids. One of the secondary objectives of the new regulations is to create a more stable market for Canadian milk proteins (as well as a more profitable market than the secondary feed market onto which domestic dairy ingredients were sold)

Canadian dairy processors use dairy ingredients (especially dairy protein isolates) for the price and competitive advantage they confer. If the new regulations are binding, it is expected that they will raise the cost structure of Canadian dairy processors. The following table report the *estimated* ratio of casein derived from milk to total content used in the Canadian industry as well as the new ratio set by regulations.

Table 14 : Casein ratio derived from milk (over total content)

Cheese type	Estimated industry ratio	Ratio set by new regulations
Mozzarella	60%	63% (Pizza) 83% (partially skimmed)
Cheddar	70%	83% 100% (old cheddar)
Others	80%	95%

Note: Current use ratios are estimated because they are proprietary information

Milk protein products used in Canada are mostly imported. Domestic milk sells at a higher price than in the world market because of production controls at the farm level and import barriers. This makes it very difficult for Canadian firms to be competitive in the dairy ingredient world market. New Zealand, Australia and the European Union are the major exporters.

Justification for the Canadian cheese case study

Canada's most important trade partners quickly voiced their opposition to the new regulations. Their objections touch upon many different areas of the regulations. The most common objections were that the changes have no clear linkages with the stated objectives, were inconsistent with Canada' trade obligation under the WTO Agreement on TBT and that the new standards are inconsistent with Codex. Some exporters (US, Switzerland and EU) explicitly suggested that the new standards put their exporting firms at a competitive disadvantage in the Canadian market. The new licensing system is believed to be discriminatory by exporters and many countries fear that the regulatory framework will impose a significant burden on exporters. Some exporting countries do not have similar standards. The European Commission does not have particular regulations on compositional standards. Individual members have different specific requirements in the production of cheese. For example, French regulations restrict the percentage of dairy proteins from milk that is to be used in cheese production. The United States, New Zealand and Australia do not have specific compositional standards that relate to dairy ingredients.

While the new standards can clearly be expected to have impacts on market access for proteins ingredients in themselves, changes to the import regime for this particular type of product have also been implemented right around the time the new standards were enacted. In Canada, imports of certain milk protein ingredients (such as skim milk powder) imports are restricted through a Tariff-Rate quota (TRQ). TRQs are two-tier tariffs that impose a relatively low tariff on imports within the market access commitment of the country and relatively high over-quota tariff (often prohibitive) on quantities above the minimum Market Access Commitment (MAC). Imports of other milk protein ingredients (such as milk protein isolates, casein caseinates, etc) were never placed on the Canadian import control list and could be imported freely up until recently. The Canadian government invoked GATT Article XXVIII to modify its market access commitments related to dairy protein ingredients in February 2007. In September 2008, Canada reached an agreement with the European Commission and Switzerland that put milk protein ingredients with total milk protein content above 85 percent on the import control list. That includes caseinates, but not certain casein products. Cheese imports are also regulated by a TRQ. The cheese MAC is

20,412 thousand tons and import license allocation procedures imply 66 percent of the MAC is set aside for members of the European Union.

Canadian imports of cheese in 2008 totaled Can$ 261.8 million (25,646 thousand tons) and represented 39 percent of all dairy imports. Specialty cheese imports totaled Can$ 222 million (20,310 thousand tons) and thus represented 84 percent of total cheese imports. The most important foreign suppliers of specialty cheese in the Canadian market were Italy (Can$ 53 million), France (Can$ 48 million) and the United States (Can$ 20 million). Among this, cheddar imports totalled Can$ 21.7 million which represented around 7 percent of total cheese imports. Imports of casein products had a value of Can$ 127.8 million (2,993 thousand tons).

The top five cheese exporting countries in 2008 are listed in Table 15. Overall, the United States is the most important foreign supplier of cheese in the Canadian market. The US retains its dominant position at the HS 6-digit level for fresh cheese (HS 040610) and grated or powdered cheese (HS 040620). However, France is the most dominant supplier of specialty cheese (HS 040690) as mentioned above.

Table 15 : Top five cheese exporting countries in the Canadian market for 2008

HS 0406	HS 040610	HS 040620	HS 040630	HS 040640	HS 040690
UNITED STATES	US	UNITED STATES	Switzerland	Denmark	France
France	Italy	Italy	France	UK	UNITED STATES
Italy	Denmark	Netherlands	UNITED STATES	France	Italy
Switzerland	Greece	Germany	Netherlands	Germany	Netherlands
Netherlands	France	UK	Denmark	Italy	Switzerland

Figure 15 presents the pattern in the monthly value of Canadian cheese imports over a 24-month period. It must be emphasized again that new compositional standards were announced in December 207 and implemented in December 2008.

Figure 15 suggests that compositional standards may have had an impact on overall cheese imports. Imports after December 2008 seem to be below the level observed twelve months ago. This year over year relationship between monthly imports was different prior to December 2008. Obviously, this observation is not a test of the hypothesis that compositional standards make it more difficult for cheese exporters to penetrate the Canadian market as other factors may explain the lower import volume. However, the issue deserves to be investigated further.

Figure 15 : Total cheese imports (HS 0406) from May 2007 to April 2009

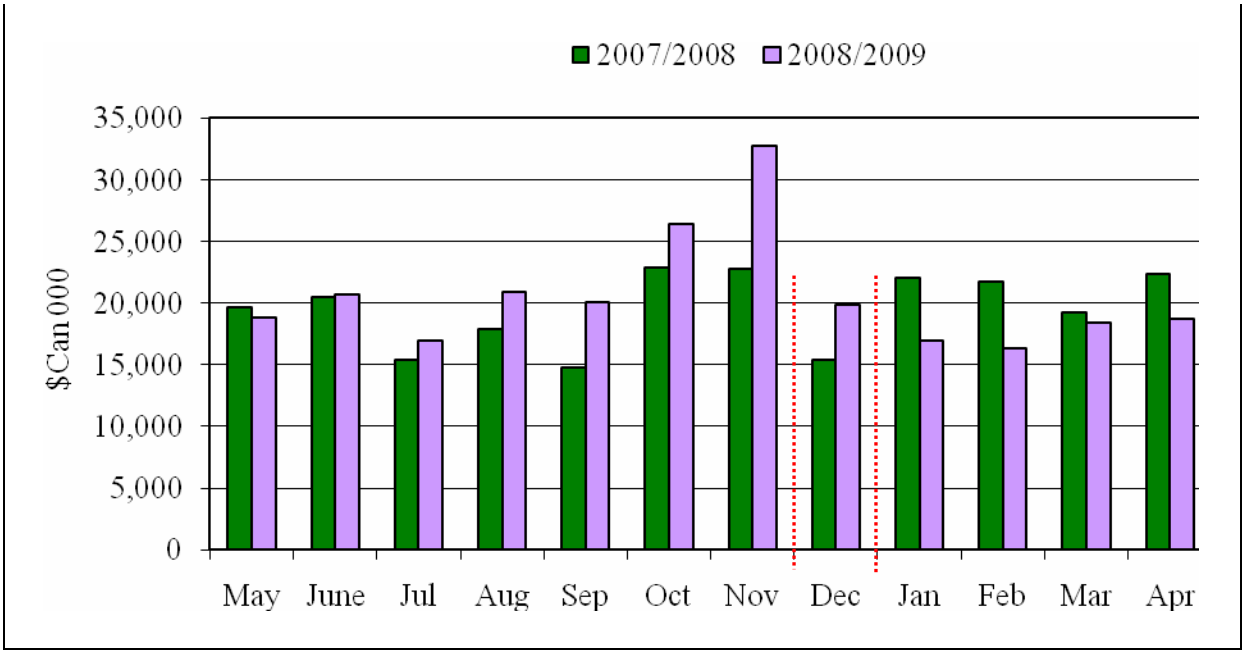


Figure 16 and Figure 17 present the pattern in the monthly value of Canadian cheese imports from the European Union and the United States, respectively. The pattern observed in Figure 15 is also present in European exports. Interestingly, this pattern is not observed for United States exports, suggesting that countries may not be impacted in identical ways.

Figure 16 : Total cheese imports from the European Union May 2007 to April 2009

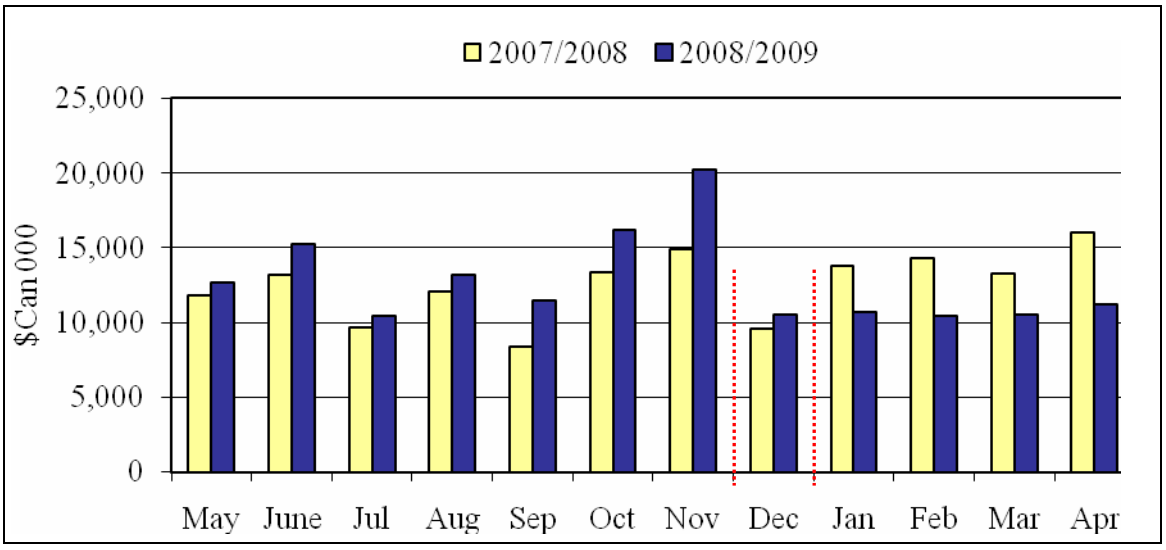
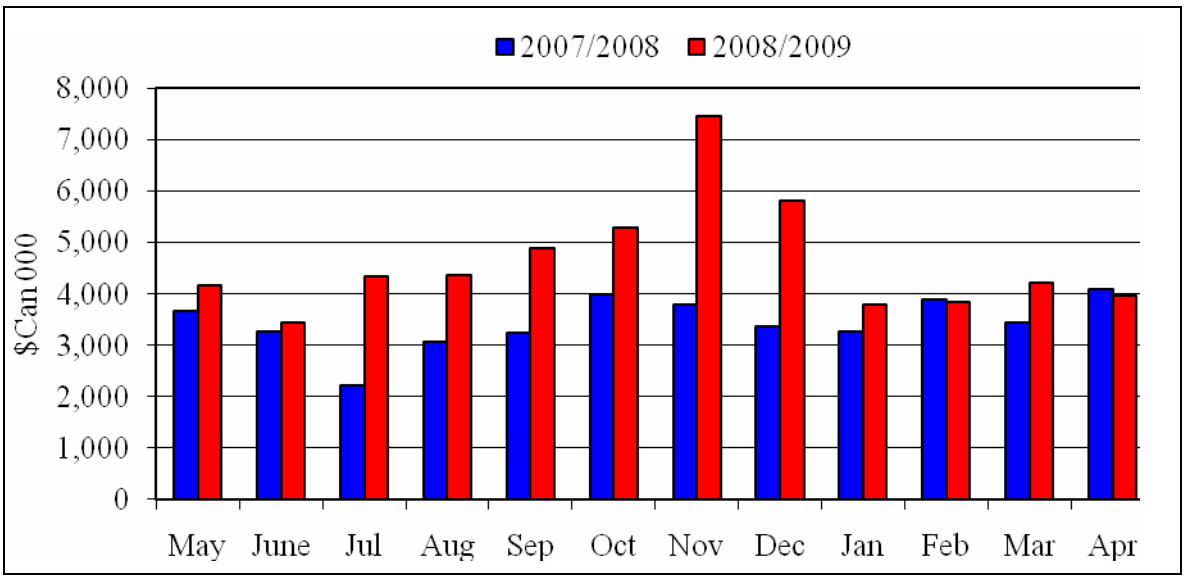


Figure 17 : Total cheese imports from the United States from May 2007 to April 2009



The changes in regulations over compositional standards for cheese involve different standards targeting different types of cheese. The new regulations have the potential to have a significant impact on the composition of Canadian imports and thus impact exporters in different ways. For example, if the burden of proving that a certain cheese product meets the required standards involves additional per-unit costs, the standard can lower the relative price of specialty cheese relative to the more common types of cheese. Such a measure would raise the competitiveness of specialty cheese suppliers such as EU firms (assuming the competitive position of domestic suppliers remains constant). Conversely, if the costs induced by the standards are fixed, this additional burden can alter the incentives of exporters to develop new niche markets in Canada as it lowers the profitability of entering the Canadian market.

The overall impact of the NTM on the EU competitiveness is function of: *i*) the nature and extent of the costs involved in respecting the standards; *ii*) barriers to trade for cheese products and prospects to further liberalize trade in that sector; *iii*) existing product composition of imports; and *iv*) domestic market structure in processing and retailing activities. The market impacts of the regulations will be assessed using a partial equilibrium model. We will investigate statistically whether new standards have had any impact on import quantities prices and market shares.

2.2 Case study on the United States cheese imports (HS 040690) – N. Winchester

Objective and research question

The case study will evaluate the economic impact of US NTMs on cheese imports from the EU and its major competitors (New Zealand, Switzerland and Australia). NTMs will be derived by estimating a gravity model and economic impacts will be calculated using a CGE model tailored to dairy trade analysis.

Given the significance of EU cheese exports to the United States, as illustrated in Table 16, Table 17 and Table 18 the case study will analyze the economic impacts of United States NTMs on EU exports of these commodities. NTMs will be derived by estimating tariff equivalents (TEs) of NTMs using a gravity approach, and possibly supplemented by NTM data collected under WP4. Economic impacts of NTMs will be estimated using a computable general equilibrium (CGE) model.

Charteris and Winchester (2008) show that neglecting joint dairy production in CGE models can exaggerate production changes induced by trade liberalization, but production changes are underestimated when all commodities are produced jointly, as assumed in models with a single processed dairy sector. Consequently, the study will evaluate the impact of NTMs using a CGE model that recognizes several dairy products and accounts for joint production of fat-based and protein-based commodities.

Table 16 : United States imports of dairy products (Chapter 04) and cheese (HS 040690), selected countries, in millions of US$, 2007.

	Dairy products (HS 04)		Cheese (040690)	
	Value	%	Value	%
EU27	884.856	51.8	731.644	72.8
New Zealand	258.042	15.1	67.527	6.7
Canada	135.09	7.9	21.615	2.2
Argentina	62.075	3.6	24.518	2.4
Australia	61.046	3.6	38.771	3.9
Mexico	56.86	3.3	9.216	0.9
Switzerland	52.671	3.1	49.374	4.9
Norway	39.997	2.3	39.039	3.9

Source: US Department of Agriculture

Justification for the USA cheese imports case study

In 2008, the EU exported € 1,897 million of cheese (HS040690) to non-EU nations. This value represents 30.2 percent of EU dairy (HS04) exports. Furthermore, EU cheese exports to the United States accounted for 28.4 percent (€ 538 million) of total EU cheese exports, and 84.2 percent of total EU dairy exports to the United States. Turning to the composition of the United States cheese imports, EU products account for a 72.8 percent of the United States cheese imports followed by products from New Zealand (6.7 percent), Switzerland (4.9 percent) and Australia (3.9 percent).

Table 17 : EU dairy exports to non-EU nations by country, 2008

Country	Million €	%
Russia	773.6	12.3
United States	637.8	10.1
Algeria	480.5	7.6
Saudi Arabia	329.4	5.2
Switzerland	272.7	4.3
Nigeria	229.0	3.6
Japan	210.4	3.3
United Arab Emirates	167.4	2.7
Oman	161.7	2.6
Venezuela	147.8	2.4
China	133.1	2.1

Source: Eurostat

Table 18 : EU dairy exports to non-EU nations by product, 2008

HS6 code	Description	To all destinations		To the US	
		€, million	%	€, million	%
040690	Cheese (exl. fresh, processed, powdered, unripined, curd, grated & blue veined)	1,897.3	30.2	537.2	84.2
040221	Milk and cream in solid form, fat content > 1.5%, unsweetened	1,563.8	24.9		
040210	Milk and cream in solid form, fat content ≤ 1.5%	449.1	7.1	2.4	0.4
040410	Whey and modified whey	402.1	6.4	0.2	0.0
040510	Butter, excluding dehydrated butter	366.4	5.8	1.0	0.2
040291	Milk and cream, concentrated but unsweetened, exl. in solid form	279.1	4.4	9.8	1.5
040630	Processed cheese, not grated or powdered	264.2	4.2	0.3	0.0
040610	Fresh cheese, unripened or uncured	251.4	4.0	11.6	1.8
040130	Milk and cream of a fat content > 6%, not concentrated nor sweetened	126.9	2.0	25.0	3.9
040390	Buttermilk, curdled milk and cream, kephir and other fermented or acidified milk or cream	117.8	1.9	2.2	0.4
040590	Fats and oils derived from milk, and dehydrated butter and ghee	111.7	1.8	1.4	0.2
040640	Blue-veined cheese	104.3	1.7	0.1	0.0
040120	Milk and cream of a fat content > 1% but ≤ 6%, not concentrated nor sweetened	89.8	1.4	30.7	4.8
040490	Products consisting of natural milk constituents, nes	80.3	1.3	0.2	0.0
040310	Yogurt	55.4	0.9	1.9	0.3
040620	Grated or powdered cheese	43.9	0.7	11.2	1.8
040299	Milk and cream, concentrated and sweetened (exl. in solid forms)	37.8	0.6	1.1	0.2
040520	Dairy spreads of a fat content ≥ 39% but < 80%	25.8	0.4	0.3	0.1
040110	Milk and cream of a fat content ≤ 1%, noy concentrated nor sweetened	10.1	0.2	1.1	0.2
040229	Milk and cream in solid forms, of fat content > 1,5%, sweetened	9.5	0.2	0.0	0.0

Source: Eurostat

2.3 Non tariff measures faced by the EU's dairy exports to Russia (HS0401 to HS0406) – M. Mraz and J. Pokrivcak

Dairy products are being increasingly traded whereas dairy markets still bear the highest rates of protection. Continuous pressures to remove subsidies and administrative pricing practices provide incentives to increase the reliance on non-tariff measures. Dairy products are especially easy to target because of their nature which requires strict SPS regulation.

Objective and research questions

The main objective of the case study is to provide a comprehensive overview of non tariff measures in the dairy Russian market based on the review of available governmental acts and as well as through interviews conducted with major dairy exporters. Furthermore the case study

aims to evaluate the restrictiveness of the identified NTMs and illustrate their impacts on the competitive position of EU dairy product exports to Russia vis-à-vis its major competitors.

Research will be carried out in three stages. In a first step a descriptive analysis of the available data on the volume, value as well as the composition of trade of dairy commodities will be performed in order to highlight the most traded commodities. An important part of this work will also be to prepare an overview of the policy support schemes of the EU and Russia's dairy markets such as administrative price, intervention purchases, existing stocks, subsidies in order to provide a correct interpretation of the respective countries trade positions. Further data information request will be addressed to our Russia partners in order to determine the market shares on the competing markets i.e. in the Russian Federation, which will in turn be complemented by the trade flows data obtained from the COMTRADE database.

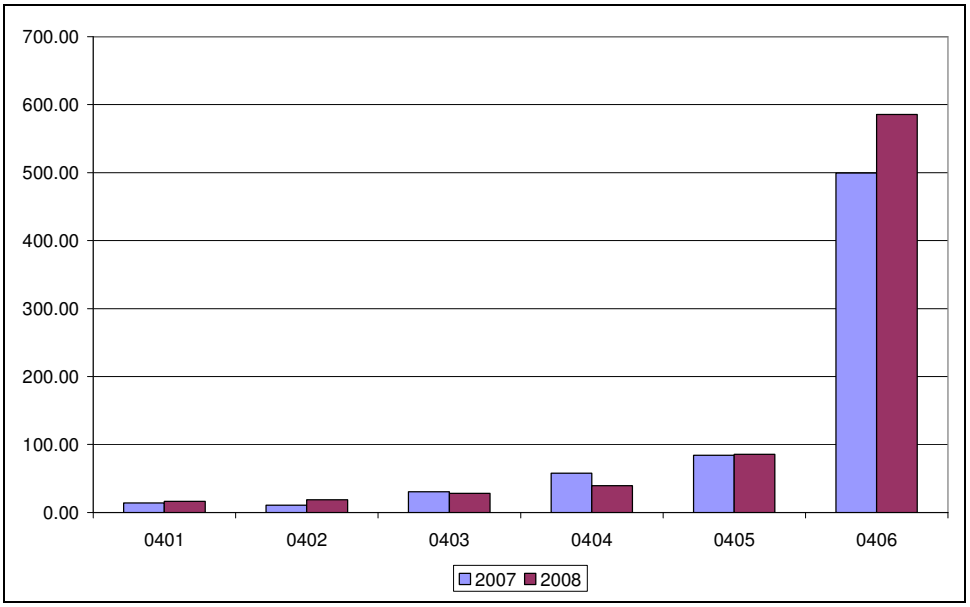
Second, the identified commodities and their respective trade flows need to be linked to the existing NTMs. The selection of relevant NTMs will rely on the response to the questionnaire and personal interviews conducted with major exporters. Both are designed to collect the most relevant information from the major EU's dairy exporters as well as regulatory agencies and will refer to the structure of the non-tariff measures the EU dairy exporters are facing in Russia as well as their perceived ranking in terms of the implied compliance costs. We expect that these will in particular cover the existing sanitary and hygiene requirements which might differ from the international standards. Here we will draw on the performance of the major EU dairy exporters, while highlighting the position of selected EU exporters serving as a main source of information. Finally the EU position on the Russia market vis-à-vis the competition of third countries will be examined.

Third, from the methodological perspective the evaluation of the identified NTM's will draw on the estimates provided by the gravity equation approach. Finally the estimates of the economy wide impacts of the identified NTM's will be obtained from CGE-type model simulations (Mraz and Matthews, 2007).

Justification for the Russian dairy case study

European agricultural exports to Russia have increased for the past ten years, reaching around 11 percent of total EU agricultural exports in 2008. EU dairy exports to Russia have been rising steadily, in particular in case of cheese and butter (see the Figure 18). Exports of other products such as derived dairy products i.e. yogurts and butter have also increased. It is expected that Russia will remain in a position of a net importer of dairy products in the next ten years. Therefore it does constitute a promising market for the EU exporters.

Figure 18 : Value of EU27's exports to Russia of dairy products (Chapter 04), millions euros



Source: Eurostat

Dairy NTMs in Russia

In the case of Russian dairy markets the information provided by the EU export helpdesk indicates, that various pesticides and veterinary drugs for animals and humans are not allowed in Russia; although these are considered by the international institutions as harmless. Russia has also adopted a range of very strict maximum residual limits (MRL), which are set significantly above the internationally accepted levels.

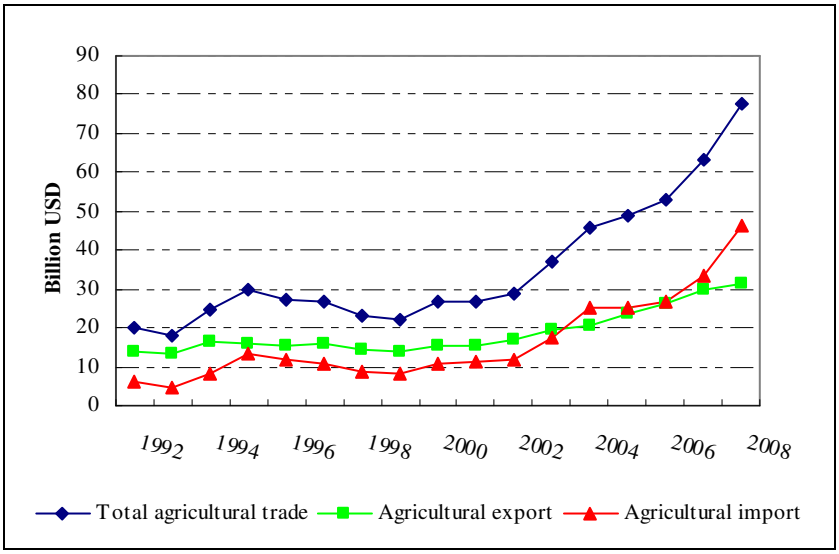
2.4 Rationale behind the selection of the dairy case study in China[2] - J. Yang and J. Huang

Justification for the Chinese case study

China's agricultural trade has grown rapidly after its WTO accession in 2001. As shown in Figure 19, China's agricultural export increased from US$ 15.4 billion in 2001 to 31.5 billion in 2008, rising by 104 percent. Meanwhile, the import grew much faster from 11.3 billion in 2001 to 46.1 billion in 2008, increasing by 307 percent. Due to a much faster growth rate of import than export, China's agricultural trade position has shifted from net exporter to net importer since 2004. The deficit reached 14.6 billion in 2008 (Figure 19).

[2] The statistics presented in this note exclude Hong Kong, Macao, and Taiwan.

Figure 19 : Chinese agricultural trade 1992-2008 (in 2000 price)



Source: authors' calculation based on UNCOMTRADE

As shown in Table 19, China's agricultural imports are quite concentrated on a few major commodities. For example, the largest importing agricultural commodity is soybean, which accounted for almost half (44 percent) of total agricultural import in 2008. However, it is also notable that the import of certain high-value agricultural commodities (e.g., animal and dairy products, high-quality grape wine) also account for large shares and their imports grow rapidly. Moreover, imports of these commodities are expected to rise in the future as the domestic demand will increase with the rise in per capita income in China. For example, there are 7 animal and dairy products and 1 processed food (HS 1901) in the list of top 15 commodities, which accounts for 15.7 percent of total agricultural import (Table 19).

Agricultural trade between China and EU grows rapidly and Chinese market is getting more and more important for EU agricultural exports. Exports of agricultural commodities from EU to China have increased from US$ 636 million (in 2000 price) in 2001 to US$ 2.196 billion (in 2000 price) in 2008, with an average annual growth rate of 19 percent. In 2008, the EU becomes the fifth largest exporter of agricultural commodities to China. The rank of China's market in the exporting destinations of EU agricultural export (excluding the EU member countries) has risen from the twelfth in 2001 to the seventh in 2008. Considering the continued rising of Chinese economy, it could be expected that the importance of Chinese market for EU will increase further in the future.

Among all agricultural commodities from EU to China, the dairy and poultry products are two of most interesting cases for trade policy analysis, especially for non-tariff measures study. Regarding dairy products, China's imports from EU had grown steadily from US$ 51 million in 2001 to US$ 157 million in 2008 (Figure 20). The dairy products have become the most important variety in all the animal products exported from EU to China. Trade of high value-added animal products, often faces NTMs. EU's dairy exports to China have raised questions on

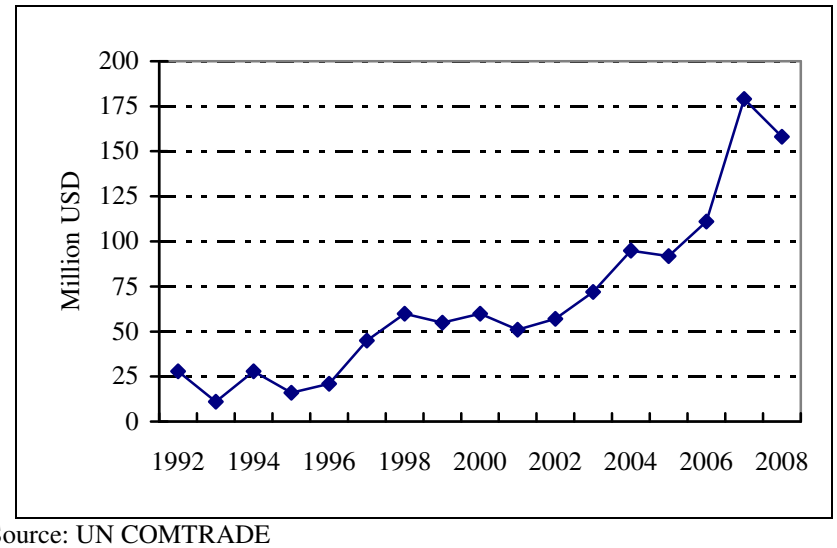
what are major determinants of China's import of high value-added animal products and what are the likely impacts of NTMs on EU's export of agrifood products to China.

Table 19 : China's imported agricultural commodities top 15 in 2008

HS Code (4 digit)	Description	Million US$	Share in total agricultural import (%)
1201	Soybean	21,815.3	44.0
1511	Palm oil	5,212.5	10.5
1507	Soybean oil	3,333.7	6.7
0303	Fish, frozen, excluding 0304.	2,729.2	5.5
2301	Meat or meat offal of fish	1,436.3	2.9
0207	Meat and edible offal, of the poultry	1,087.7	2.2
1205	Rapeseeds	754.4	1.5
2208	Undenatured ethyl alcohol	658.7	1.3
1513	Coconut, palm kernel or babassu oil	594.9	1.2
1901	Food preparations of flour	580.5	1.2
0206	Edible offal of bovine	567.8	1.1
0203	Meat of swine, fresh, chilled or frozen	523.5	1.1
1003	Barley	484.3	1.0
0307	Molluscs	472.1	1.0
0402	Milk and cream	401.4	0.8

Source: Authors' calculation based on UNCOMTRADE data

Figure 20 : China's imports of dairy products (HS 0401 to 0406) from the EU, 1992-2008 (2000 price)



Source: UN COMTRADE

Objective and research question

Critical issues on NTMs include the following four sets of questions.

- What kinds of NTMs have been adopted to regulate the import of dairy products? Do they differ between dairy and poultry products?
- How have these NTMs been implemented in both dairy and poultry products?
- Have these NTMs significantly affected the import of dairy products? Why EU's export of dairy to China has been increasing? Did China's NTMs play no role in regulating EU's dairy export to China?
- What are the competitive positions of major dairy products providers in China, (e.g. EU, New Zealand, Australia and United States)?

3 - Case studies on fruits and vegetables (HS Chapters 07 and 08)

3.1 Impact of NTMs on European apples (HS 0808) and tomatoes (HS0702) competitiveness on the Russian market – N. Karlova and D. Rylko

Objective and research question

This research focuses on fresh fruit and vegetable imports of Russia. The research objective is to assess the impact of non tariff barriers on the competitiveness of fruit and vegetables imported from European countries to the Russian market.

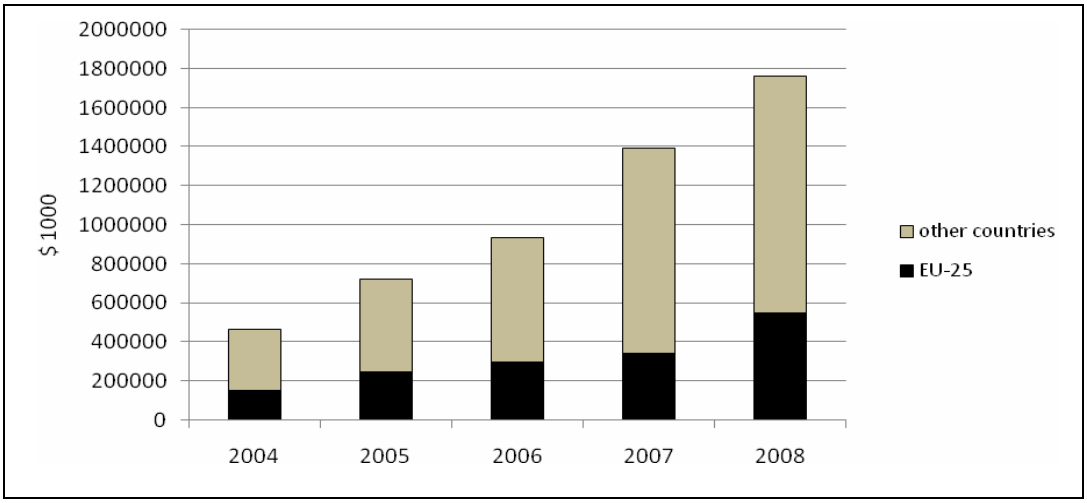
Justification for the Russian apples and tomatoes case study

Over the recent years, imports of fruit and vegetables to Russia have shown a steady annual increase. Overall import market capacity, measured in terms of official customs value, had reached almost US$ 1,800 million for fresh vegetables and almost US$ 4,500 millions for fresh fruits.

Today, about 80 percent of Russian fruit and vegetables are produced in small subsistence plots and estimated marketability of this production does not exceed 10 percent. Commercial production remains highly seasonal and not very diversified. In other words, domestic market of fruit and vegetables in Russia is greatly influenced by imports.

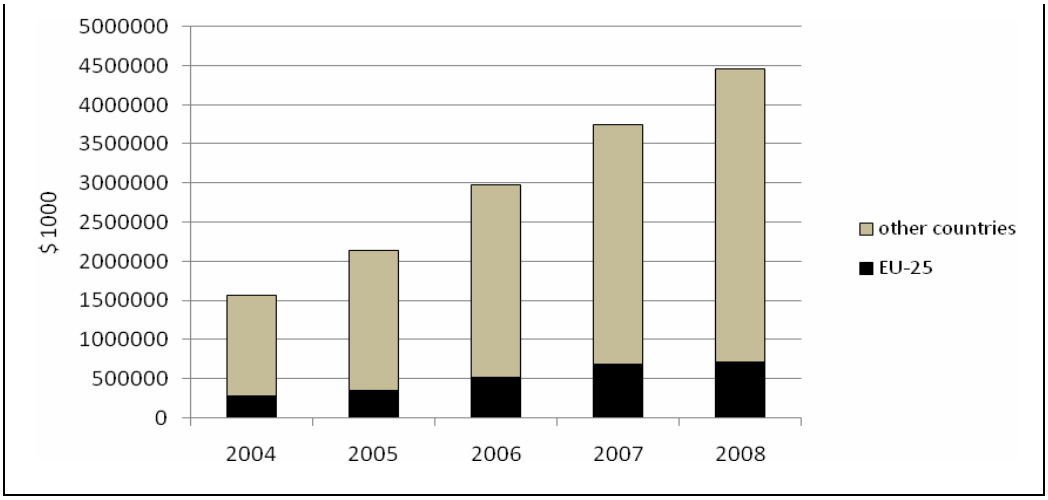
The EU's fresh fruits and vegetables play a significant role on the domestic market. Around 30 percent of vegetable and 15-18 percent of fruit imports originate in the EU. Main vegetable imports include tomatoes, potatoes, onions, cabbages. The key items of EU fruit imports to Russia are apples, pears, grapes, apricots, peaches.

Figure 21 : Dynamics of vegetable imports to Russia



Source: Federal Customs Service.

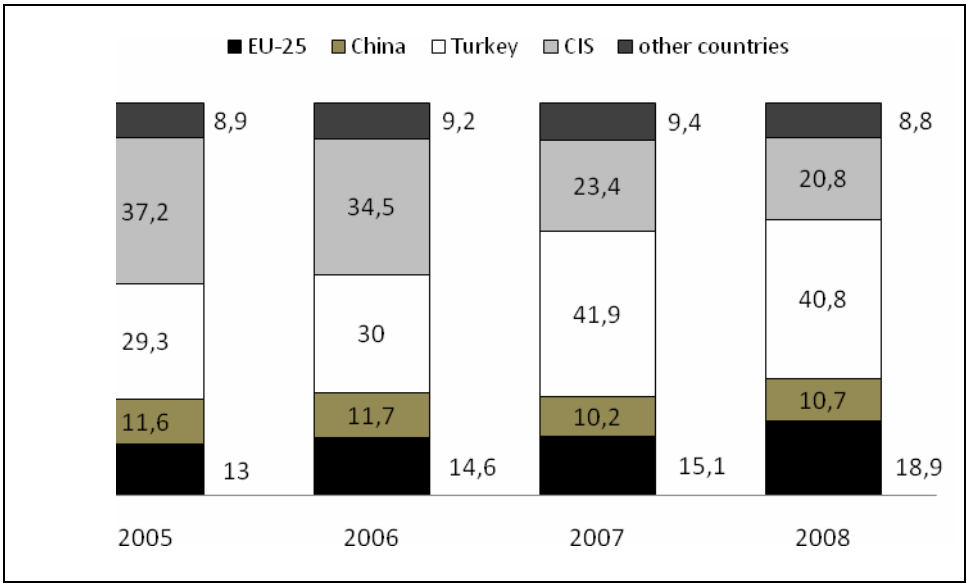
Figure 22 : Dynamics of fruits imports to Russia



Source: Federal Customs Service.

The specific subject of the research is import of tomatoes and apples from the EU. Russia is world's number 3-4 importer of fresh tomatoes. EU's tomatoes sold in Russia come principally from Spain, Netherlands, Poland, and Belgium. In the last 4 years the share of the EU countries in the Russian tomato market has increased from 13 percent to 18.9 percent; while Turkey has significantly strengthened its position from 29.3 percent to 40.8 percent, due to import substitution from CIS. It is then a major competitor of European countries in tomato imports. China is still maintaining its position with 11 percent of imports (Figure 23).

Figure 23 : Structure of Russian imports of tomatoes by countries in %

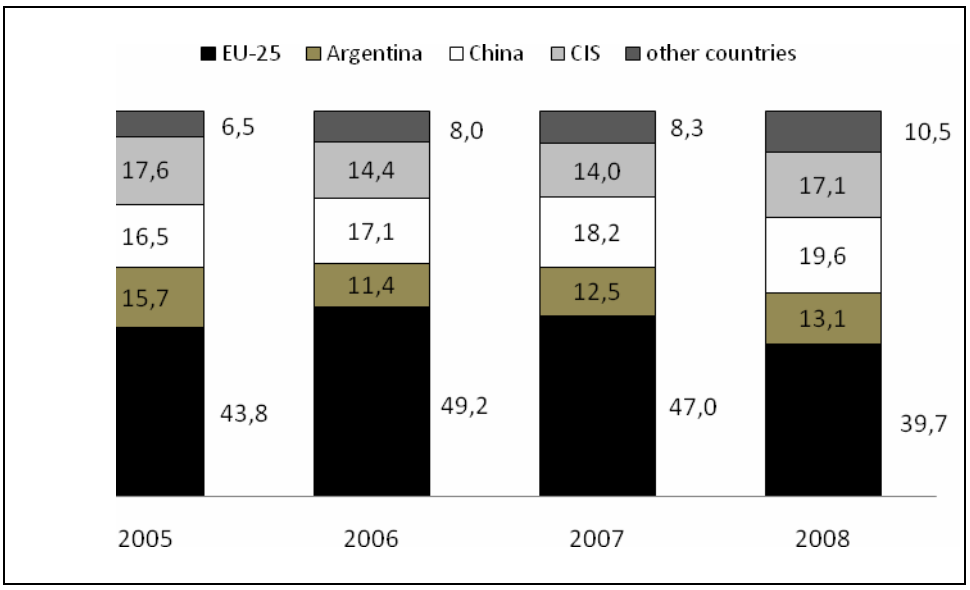


Source: Federal Customs Service.

Russia is the world's largest importer of fresh apples and The EU is the main apple exporter to Russia (40-49 percent of Russian imports). Poland and Belgium are the leading exporting

countries. Other big apple suppliers to Russia are Argentina, China, and CIS countries (Figure 24).

Figure 24 : Structure of the Russian imports of apples by countries, %.



Source: Federal Customs Service.

NTMs affecting Russian fruits and vegetables imports

Formal trade restrictions on fruit and vegetables are quite insignificant: import tariff on vegetables is 15 percent, and 5-10 percent on fruits. For apples and tomatoes, import tariffs depend on the season. However, in the last 2-3 years non tariff restrictions have been applied on vegetables and fruits imports, particularly apples and tomatoes. These restrictions are used both as a trade protection and, probably also as a mean of political pressure. One should also mention general unintentional/untargeted awkwardness for importers just because of changes in domestic state regulatory system.

The following non tariff barriers on fruit and vegetables imports to Russia have been identified:

1. *Customs value control*. According to the Russian Tax Code, the customs authority holds the decision on the value of goods based on data and documents submitted by a supplier. In practice, the control of representatives of customs authorities is based on indicative prices set forth by the Government. As a result, products that could have been exported into Russia at lower prices often lose their edge.

2. *National requirements on MRL of pesticides, nitrates, nitrites, heavy metals, etc.* On March 26, 2008 the European Commission and Russia signed a Memorandum on product safety of plant origin coming from the EU to Russia regarding the concentration of pesticides, nitrates, and nitrites. According to this Memorandum, all fruit and vegetable products exported from the EU into Russia have to be accompanied by an appropriate Declaration of Safety that shall include information on all protection measures adopted for production and storage.

The EU authorizes some acceptable level of concentration of pesticides, nitrates, and nitrites if it is based on a scientific assessment of risk and in compliance with the Codex Alimentarius. However, in some cases, the levels set forth by the Russian laws are lower than the EU levels. This was the reason for the signature of the Memorandum. Fruit and vegetables can be delivered from the EU only if all the safety requirements of the Memorandum are observed.

The following restrictions have been implemented as additional requirements to imports of fruit and vegetables from the EU: 1) only products of companies that have been previously listed as agreed by the Federal Service for Veterinary and Phytosanitary Surveillance are allowed to Russian markets; 2) for some products from the EU Certificates of Origin have to be presented.

These restrictions will obviously affect the volumes of European exports of fruit and vegetables to Russia.

3. *Sophisticated and complicated customs clearance procedure.* Given short shelf life of fruit and vegetables, timescale for customs clearance plays a crucial role. An Import Quarantine Permit is required for customs clearance of fruit and vegetable products. This document is issued by the Federal Service for Veterinary and Phytosanitary Surveillance. The issuance decision of an Import Quarantine Permit is made within 30 days and for short shelf-life products within 4 days (Order by the Ministry of Agriculture of the RF13.02.2007 N. 84 "Arrangement of Issuance of Import Quarantine Permits"). Often delays in issuance of permit documents lead to product damage. Besides, according to conditions of customs clearance of goods, all customs duties shall be paid before declaring goods. If in the meanwhile goods have been damaged, the duties paid cannot be claimed back. This leads to additional costs for exporters to Russia and impacts the final sales price of products in the Russian market.

4. *High inter-regional trade barriers within Russia.* The product safety certificate issued by the Russian phytosanitary inspection gives the right to sell the product only in one domestic region. If the product has to be moved to another region (Russia is divided into more than 80 administrative regions) another safety certificate must be issued from the local inspector. This increases transaction costs and impacts the final price paid by the domestic consumer.

3.2 Technical Measures Affecting Spain's Competitiveness in International Citrus Markets (HS 0805) – D. Orden and C. Cororaton

Objective and research question

The objective of this note is to present the rationale and research plans for a proposed study on how technical measures in world citrus markets affect the competitive position of Spain. In the European Union, Spain is a major producer and exporter of fresh citrus fruits. Although Spain mostly trades its citrus fruits within the European Union, the United States imports significant

amount of citrus fruits from Spain, particularly clementines and lemons. Spain faces competition in the United States market from other countries and over time that competition is affected both by technical measures related to Spain's exports and also by the access competing exporters have based on technical and other considerations. The citrus industry in the United States faces a challenging task to control the effects of citrus fruit diseases and pests, as well as fruit flies and other general sanitary and phytosanitary risks. Some of these risks originate through importation of citrus fruits. The United States has put in place several measures that prevent the flow of these diseases and pests, including flows through importation. The study will assess the effects of these disease/pest-related measures on competition in the United States market. Likewise, the technical measures of the European Union that affect the competition Spain faces in this large market will be assessed. Simulation models incorporating disease/pest-risk-related costs will be utilized to evaluate the effects of the technical measures on production, consumption, trade and consumer and producer welfare.

Justification for the Spain's citrus case study

There are 5 major categories of citrus: (1) oranges; (2) lemons and limes; (3) tangerines, mandarins, and clementines; (4) grapefruits, and (5) all other citrus. Table 20 shows the structure of world production of citrus. Overall citrus production grew by 2.6 percent per year over the period 1990-2007, increasing from 81 million tons to 114 million tons. Tangerines, mandarins, and clementines are the highest growing citrus fruit category, growing at 5 percent per year and capturing 23 percent of overall citrus production. Production of lemons and limes has also above average growth of 3.7 percent per year over the same period, and at present captures 11 percent of total citrus production. Although the growth of production of oranges is relatively slower at 1.8 percent per year, it still captures more than 50 percent of total production. Its share to the total has declined from 64 percent in the early 1990s to 56 percent in recent years.

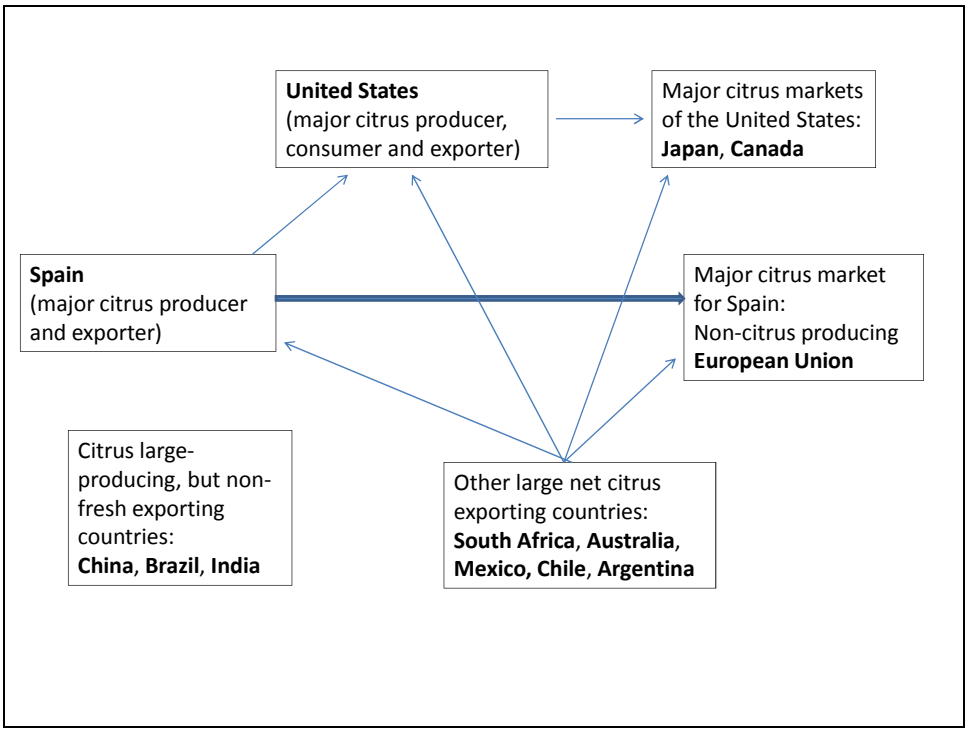
Table 20 : World citrus production

			Annual average		Ave. annual
	Average Share, %		('000 tonnes)		gr. %
	2007-2005	1992-1990	2007-2005	1992-1990	2007-1990
Oranges	56.3	63.8	64,304	51,932	1.8
Lemons & limes	11.0	9.4	12,540	7,677	3.7
Tangerines, mandarin & clementine	22.7	16.3	25,945	13,309	5.0
Grapefruit	4.0	5.2	4,532	4,216	1.1
All Other Citrus	6.2	5.3	7,037	4,284	3.8
Total	100.0	100.0	114,358	81,418	2.6
Source: FAOSTAT					

We summarize in Figure 25 the flow of citrus fruits in the international market. The two largest producers of citrus fruits are China and Brazil, each producing about 18 percent of total volume of citrus production in 2007. However, citrus production in China is not traded in the international market, but mainly sold domestically. Production in Brazil is processed domestically into juice concentrate. Brazil is the world's largest exporter of orange juice

concentrate. India is also a large producer of citrus fresh fruits with 5.4 percent share in the total volume of world production, but citrus produce is largely sold in the domestic market.

Figure 25 : International trade flows of citrus



The United States is the third largest producer, capturing 8.5 percent in the total volume of production in 2007. It is both an exporter and importer of citrus fresh fruits. As an exporter, the United States sells primarily to the markets in Japan and Canada. However, because of increasing demand in the domestic market and seasonality in production, imports of citrus is critical in smoothing out domestic supply to satisfy demand in the domestic market. The international suppliers of fresh citrus fruits in the United States domestic market are Mexico, Spain, Chile, South Africa, and Australia.

Spain accounts for 4.4 percent of the total volume of citrus production in 2007, but it is the largest exporter of citrus fresh fruits. In 2005, it exported US$ 2.7 billion worth of citrus, capturing 39 percent of the world market. The largest market of Spanish citrus is the non-citrus producing European Union countries, particularly Germany and France. Spain also exports significant amount of clementines to the United States.

South Africa, Mexico, Chile, Argentina, and Australia are citrus net-exporting countries that sell to non-producing European Union countries, as well as the United States (except Argentina), Japan and Canada. Spain is also a market for citrus, especially for Argentina lemons.

Spain's International Trade of Citrus

Table 21 shows details of Spain's exports of fresh citrus fruits. Exports consist mostly of 3 types, namely: tangerines, mandarins, and clementines; oranges; and lemons and limes. In 2005, 57 percent of Spain's production of fresh citrus fruit was exported, of which more than 90 percent went to non-citrus producing countries in the European Union. Of the total value of Spain's exports of citrus in 2005, 26 percent went to Germany and 25 percent went to France. Aside from these two large European Union markets, Spain also sells fresh citrus fruits to other European countries such as the United Kingdom, Netherlands, Poland, Italy, Belgium, and other countries. Outside of the European Union markets, Spain also exports to the United States. In 2005, more than 3.5 percent of Spain's value of exports was with the United States. This consisted mostly of tangerines, mandarin, and clementines (clementines in particular) and lemons and limes.

Spain also imports fresh citrus fruits, but significantly lower compared to its exports. In 2005, it imported equivalent to 5 percent of its production (Table 22). Most of these imports were oranges and lemons and limes. Spain imports oranges mostly from South Africa, Uruguay, and Argentina. It imports lemons and limes from Argentina.

Table 21 : Spain exports of Citrus in 2005

	Value ($1000)							Volume (tons)						
	Oranges	Lemons and limes	Tangerines, mandarins, & clementines	Grapefruit (inc. pomelos)	Citrus fruit, nes	Total		Oranges	Lemons and limes	Tangerines, mandarins, & clementines	Grapefruit (inc. pomelos)	Citrus fruit, nes	Total	
FAOSTAT Codes	490	497	495	507	512	Value	% of total	490	497	495	507	512	Volume	% of total
Germany	233,222	62,926	372,209	6,297	9	674,663	25.5	308,333	84,756	385,472	6,775	8	785,344	26.0
France	240,311	72,335	342,886	11,062	1,499	668,093	25.2	290,419	80,649	327,970	11,142	931	711,111	23.5
United Kingdom	64,946	27,367	131,056	468	3	223,840	8.4	81,041	37,264	127,105	530	1	245,941	8.1
Netherlands	86,152	14,571	88,088	492	74	189,377	7.1	121,015	18,433	86,500	614	37	226,599	7.5
Poland	25,744	29,780	88,676	1,736		145,936	5.5	39,979	44,438	119,605	1,947		205,969	6.8
Italy	28,752	17,003	77,083	1,355	45	124,238	4.7	37,218	21,122	84,912	1,698	50	145,000	4.8
Belgium	60,018	8,290	47,630	1,172	3	117,113	4.4	62,083	8,647	41,896	1,120	1	113,747	3.8
United States		567	92,416			92,983	3.5		776	66,334			67,110	2.2
Switzerland	20,329	7,610	27,144	1,327		56,410	2.1	24,246	7,906	26,900	1,449		60,501	2.0
Czech Republic	10,248	5,771	35,724	1,263	3	53,009	2.0	15,427	8,777	45,682	1,595	7	71,488	2.4
Sweden	19,539	4,420	26,650	47		50,656	1.9	28,188	6,400	28,190	68		62,846	2.1
Denmark	9,719	3,090	23,915	25		36,749	1.4	13,827	4,122	24,807	32		42,788	1.4
Austria	11,698	4,099	19,784	299		35,880	1.4	16,109	5,081	22,532	343		44,065	1.5
Norway	13,809	1,802	15,618	98		31,327	1.2	18,462	1,995	17,273	108		37,838	1.3
Hungary	6,102	1,774	16,036	513	-	24,425	0.9	10,000	2,474	22,566	601	-	35,641	1.2
Top 15 Sub-total	830,589	261,405	1,404,915	26,154	1,636	2,524,699	95.3	1,066,347	332,840	1,427,744	28,022	1,035	2,855,988	94.5
Total	863,504	280,796	1,475,806	27,428	1,837	2,649,371		1,115,790	361,679	1,512,533	29,723	1,292	3,021,017	
2005 citrus production (tonnes)													5,323,964	
Exports as percent of total production													56.7	
Source: FAOSTAT														

Table 22 : Spain imports of citrus in 2005

	Value ($1000)							Volume (tonnes)						
	Oranges	Lemons and limes	Tangerines, mandarins, & clementines	Grapefruit (inc. pomelos)	Citrus fruit, nes	Total		Oranges	Lemons and limes	Tangerines, mandarins, & clementines	Grapefruit (inc. pomelos)	Citrus fruit, nes	Total	
FAOSTAT Codes	490	497	495	507	512	Value	% of total	490	497	495	507	512	Volume	% of total
Argentina	9,633	53,210	123	1,113		64,079	36.0	16,244	70,069	160	1,223		87,696	32.7
South Africa	33,422	3,517	463	5,995		43,397	24.4	54,568	4,501	664	6,593		66,326	24.7
Uruguay	15,034	2,876	926			18,836	10.6	24,521	3,625	1,173			29,319	10.9
Netherlands	4,669	2,615	1,035	507	24	8,850	5.0	6,365	2,940	989	613	30	10,937	4.1
Egypt	7,950					7,950	4.5	13,707					13,707	5.1
France	2,287	2,894	1,435	371	42	7,029	4.0	8,629	3,398	2,892	450	7	15,376	5.7
Portugal	3,394	502	1,474	237	1	5,608	3.2	7,702	612	1,991	252	-	10,557	3.9
Turkey	4,636	17		43		4,696	2.6	7,687	20		55		7,762	2.9
Morocco	3,591		345			3,936	2.2	6,596		427			7,023	2.6
Brazil	2,785	188				2,973	1.7	5,879	193				6,072	2.3
Italy	695	765	603	5	3	2,071	1.2	575	750	429	2	1	1,757	0.7
Chile	1,404	18	384	204		2,010	1.1	2,218	25	529	247		3,019	1.1
Zimbabwe	1,656			44		1,700	1.0	2,773			42		2,815	1.0
Germany	592	432	106	7	1	1,138	0.6	872	499	157	11	-	1,539	0.6
Australia	677					677	0.4	893					893	0.3
Top 15 Sub-total	92,425	67,034	6,894	8,526	71	174,950	98.4	159,229	86,632	9,411	9,488	38	264,798	98.7
Total	93,193	67,749	7,940	8,866	91	177,839		160,520	87,198	10,473	9,916	46	268,153	
2005 citrus production (tonnes)													5,323,964	
Imports as percent of total production													5.0	
Source: FAOSTAT														

The United States Citrus Market and Trade

The United States is a major producer, consumer and exporter of fresh citrus fruits. The domestic production of oranges in the United States has always been larger than domestic consumption. The United States is a net exporter of oranges. About one-third of its domestic volume of production of oranges is exported.

Similarly, domestic production of lemons in the United States has always been greater than domestic consumption. The United States is net exporter of lemons. However, the volume of net export of lemons of the United States has been on a declining trend. Historical data indicates that this is largely due to the increasing trend in lemon consumption in the domestic market.

The consumption of tangerines in the United States has always been larger than domestic production. The United States is a net importer of tangerines. The volume of net imports of tangerines in the United States has been on an increasing trend.

Grapefruit is another citrus fruit which the United States is producing. Over the year, domestic production of grapefruit has always been larger than domestic consumption. Thus, the United States has been a net exporter of grapefruits. However, the volume of net exports of grapefruit has been on a declining trend. This is because while the volume of domestic consumption of grapefruit has declined, the drop in the volume of domestic production has been significantly larger. But despite the drop in domestic production of grapefruit, exports of grapefruits in the United States remain a large part of its domestic production.

Table 23 shows the sources of imported fresh citrus fruits into the United States. There is a significant increase in the volume of imported citrus into the United States. Imported oranges increased from 31.6 thousand tons in 1997 to 115.1 thousand tons in 2007, improving by 13.8 percent per year. The sources vary significantly through the years. Australia, South Africa, and Mexico are the three major sources of imported oranges in the United States. However, in 2007, Spain's share surged to 20 percent from almost zero since 2000.

Table 23 : Sources of United States imports of citrus fruits

	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Oranges											
World Total (1000 kgs)	31,620	38,530	103,924	46,697	55,633	58,715	54,391	65,668	69,035	73,588	115,113
Share to World Total (%):											
Australia	48.7	66.9	21.3	51.6	29.0	35.4	36.3	34.5	39.8	30.3	25.2
South Africa	0.9	0.3	0.7	20.2	31.3	27.6	42.5	40.8	40.8	48.1	24.9
Spain	4.6	0.0	17.2	1.8	0.2	-	0.0	0.0	0.0	-	19.9
Mexico	33.1	21.0	49.2	16.7	27.4	28.0	11.9	16.9	15.5	17.5	15.7
Italy	0.5	0.5	0.2	0.5	1.0	0.4	0.5	0.2	1.8	1.0	5.4
Others	12.3	11.3	11.3	9.3	11.1	8.5	8.7	7.5	2.1	3.1	9.0
Tangerines/Clementines											
World Total (1000 kgs)	42,110	43,167	90,392	96,276	75,383	62,024	98,684	77,261	94,963	107,492	112,055
Share to World Total (%):											
Spain	82.0	82.4	85.9	86.9	79.3	62.3	73.2	72.1	66.1	61.3	56.9
Chile	-	0.0	0.1	-	-	-	-	0.0	8.4	11.0	10.7
Peru	-	-	-	-	-	-	-	-	-	1.8	9.9
Morocco	1.4	2.0	2.6	1.0	0.4	15.6	9.1	1.2	3.3	4.3	6.8
Mexico	10.0	6.6	4.4	4.5	5.2	5.9	3.2	5.6	4.3	3.9	5.4
Others	6.6	9.0	7.1	7.7	15.1	16.2	14.5	21.1	17.8	17.7	10.3
Lemons											
World Total (1000 kgs)	22,651	22,339	21,766	26,795	35,854	34,733	27,204	39,032	34,651	38,788	86,271
Share to World Total (%):											
Mexico	1.3	1.6	2.0	2.0	1.7	2.9	10.1	32.5	36.1	40.5	46.8
Chile	33.5	26.2	36.3	25.7	19.0	30.9	52.0	49.5	58.6	40.5	32.0
Spain	22.2	55.7	39.8	33.4	21.2	60.8	14.8	9.6	2.7	16.2	17.6
Turkey	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.1	0.0	1.2
Dominican Republic	0.8	0.8	1.4	0.8	0.5	0.8	1.0	1.2	0.8	0.7	0.6
Italy	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.5
Others	42.2	15.8	20.4	38.1	57.6	4.6	22.0	7.1	1.8	2.1	1.3
Limes											
World Total (1000 kgs)	151,210	161,133	157,441	181,446	142,057	235,561	247,436	282,040	308,032	311,491	344,932
Share to World Total (%):											
Mexico	98.9	99.5	98.8	98.7	98.4	99.2	98.8	98.5	98.4	97.5	97.1
Guatemala	0.1	0.0	0.1	0.0	0.0	0.1	0.2	0.4	0.6	1.2	1.4
Colombia	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.2	0.6	0.7
Ecuador	0.5	0.1	0.6	0.6	1.0	0.4	0.3	0.4	0.5	0.4	0.3
El Salvador	0.0	0.0	0.1	0.3	0.4	0.3	0.3	0.2	0.1	0.1	0.2
Others	0.6	0.4	0.5	0.5	0.2	0.2	0.2	0.1	0.2	0.2	0.2

Source: U.S. Department of Commerce, U.S. Census Bureau.

There is also a notable increase in imported tangerines and clementines into the United States. Imports increased from 42 thousand tons in 1997 to 112 thousand tons in 2007, increasing by 10.3 per annum. Spain has been the major source of imported clementines into the United States. However, its share has declined from 82 percent in 1997 to 57 percent in 2007. The drop was due to the surge in imports from Chile, Peru, and Morocco.

There is a respectable growth in imported lemons in the United States. From 22.7 thousand tons in 1997, imports grew to 86.3 thousand tons in 2007, improving by 14.3 percent per year. The sources of imported lemons vary considerably through time. The share of Mexico surged from 1 percent in 1997 to 47 percent in 2007. The share of Chile declined from 52 percent in 2003 to 32 percent in 2007. Spain's share has been erratic. From 61 percent in 2002, its share dropped to 15 percent in the following year. The share continued to drop to its lowest value of 2.7 percent in 2005. However, imports from Spain started to recover thereafter. In 2007 Spain's share was 17.6 percent.

There is almost zero production of limes in the United States. Thus the volume of imported limes is significant relative to the other citrus fruits. The growth of imported limes in the United States has also been notable from 115.1 thousand tons in 1997 to 344.9 thousand tons

in 2007, increasing by 8.6 percent per year. Imported limes in the United States largely come from Mexico.

To summarize, the sources of imported citrus fruits in the United States vary significantly through the years. This case study will investigate the role of SPS concerns, as well as other factors, in determining the sources of imports that have caused the shares to vary. The historical data indicate that the market for citrus in the United States is competitive especially for Spain. Its share in the clementines market, although still significant, has declined. Chile, Peru and Morocco have entered the market. The share of Spain in lemon imports in the United States used to be significant. It dropped, but recovered in 2007. Argentina is a major producer of lemons. A final rule that would allow Argentina lemons into the United States is under consideration. This could reduce the share from the other sources including Spain.

SPS Issues in Citrus Trade of the United States

Higher imports help the United States address the increasing consumer demand for fresh foods, including fresh citrus. However, while imports of fresh produce lower costs and prices in the domestic market, increase the number of available varieties, and extend seasonal availability of supply in the United State, higher volume of imports of fresh products can increase significantly the risk of introducing foreign pests and diseases that can result in severe damage in domestic crops, livestock, and the environment. It may be the case that the benefits of lower prices and higher product availability in the domestic market because of imports are offset by the damage caused by infestation of foreign pests and diseases. In the case of citrus, one such damaging pest is the Mediterranean fruit fly (medfly). Medfly is a serious pest for many fruit and vegetable crops. Medfly is known to exist in 65 countries. In the United States entry of fresh fruits is allowed only if these fruits have been treated to eliminate medfly larvae.

Between November and December of 2001 live medfly larvae were detected and intercepted in separate shipments of clementines from Spain (Livingston, Osteen, and Roberts, 2008). This prompted the United States Department of Agriculture (USDA) to temporarily ban clementines imports from Spain and to launch an investigation of the causes of infestation in order to determine whether appropriate and feasible phytosanitary measures could be adopted to permit trade to resume. The results of the investigation determined that infestation was caused by a number of factors including: “the warm weather conditions and the above-average medfly population during the 2001-2002 growing season; the susceptibility of early-season clementine varieties; and problems with the application of cold treatment” (Livingston, Osteen, and Roberts, 2008).

In October 15, 2002, the USDA issued the final rule on Spanish clementine imports. Under the rule, it is required that Spanish clementine producers who export to the United States must register with the government of Spain and must follow strict management and inspection program. Important details in the program include: (a) “Pheromone-baited medfly traps must be placed in orchards 6 weeks prior to harvest, and baited pesticides sprays using malathion, spinosad, or other approved pesticide must be applied according to a population threshold rule”; (b) “registered growers are required to file detailed records of their medfly population data and pesticide sprays with the government of Spain and allow APHIS inspectors access to their groves and records”; (c) “boxes of clementines must be labeled to identify the orchard in which they were grown”; (d) “before loading onto sea vessels for export to the United States, 200 clementines must be randomly selected from each individual shipment (not to exceed 200,000 boxes) by an APHIS inspector. If the single live medfly (egg, larvae, pupae) is found, the entire shipment is rejected, and if there is a second occurrence for the same orchard,

shipments are suspended for the reminder of the season from that orchard"; (e) "shipment that pass inspection must undergo cold treatment prior to offloading in the United States"; and (f) "APHIS inspectors examine the cold treatment data and inspect the fruit; if the cold treatment has not been successfully completed or if a single live medfly is found, the shipment is held until an investigation is completed and appropriate remedial actions implemented" (Livingston, Osteen, and Roberts, 2008).

There are other infestation of pests and diseases that are critically challenging the citrus industry in the United States. One of these is the huanglongbing (also called HLB or citrus greening). HLB is a serious disease of citrus because it affects all citrus cultivars. It also causes tree decline. HLB has seriously affected citrus production in a number of countries in Asia, Africa, the Indian subcontinent and the Arabian Peninsula. It was discovered in Brazil in July 2004. In August of 2005, HLB has been found in south Florida region of Homestead and Florida City. The HLB species found in Florida is the Asian species which occurs in warn low altitude areas and is transmitted by the Asian citrus psyllid (Diaphorina citri Kuwayama). The Asian citrus psyllid that carries HLB was discovered in Florida in 1998 and now occurs through the state wherever citrus is grown.

Other than the HLB, the citrus industry has identified 12 more diseases and pests (University of Florida, Institute of Food and Agricultural Sciences Extension , 2009): (1) citrus canker; (2) phytophthora foot rot and root rot; (3) brown rot of fruit; (4) greasy spot; (5) melanose; (6) citrus scab; (7) alternaria brown spot; (8) postbloom fruit drop; (9) exocortis, cachexia, and other viriods; (10) blight; (11) tristeza; and (12) postharvest decays.

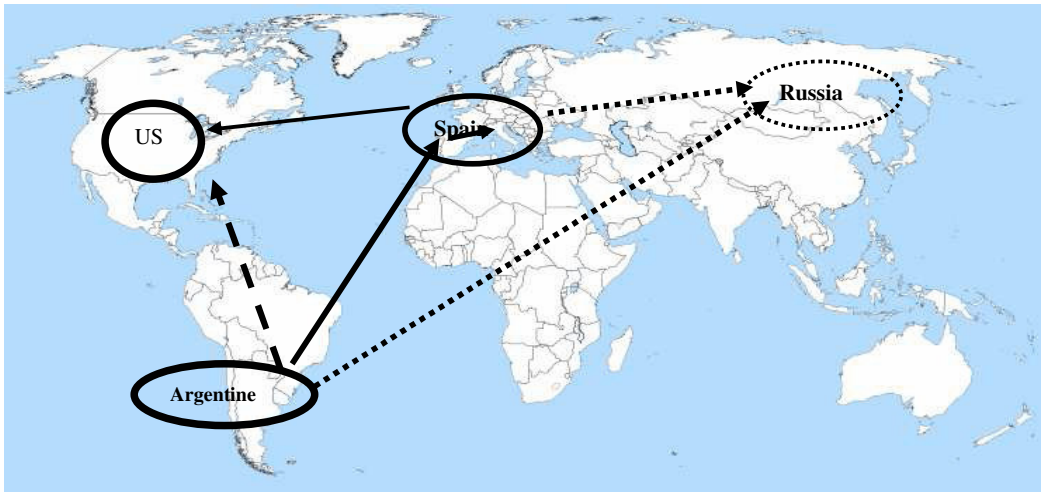
As part of the case study, the SPS measures implemented that address these problems on pests and citrus diseases will be fully described and analyzed.

3.3 Argentina's lemon case study (HS 080550) – D. Iglesias, G. Ghezan, M. Cendon and G. Iturrioz

Objective and research question

The objective of this case study is to analyze the importance of lemon SPS measures in shaping trade from EU (Spain), Argentina and the United States, assuming that any change in these players' rules can affect world lemon trade flows. We wonder how the opening of the US lemon market can potentially affect Spain and Argentina relative competitiveness. We will focus on the potential effects of the removal of the SPS requirement imposed by USA on the relative competitiveness of Spain and Argentina, not only in the portion of USA market but also in third countries.

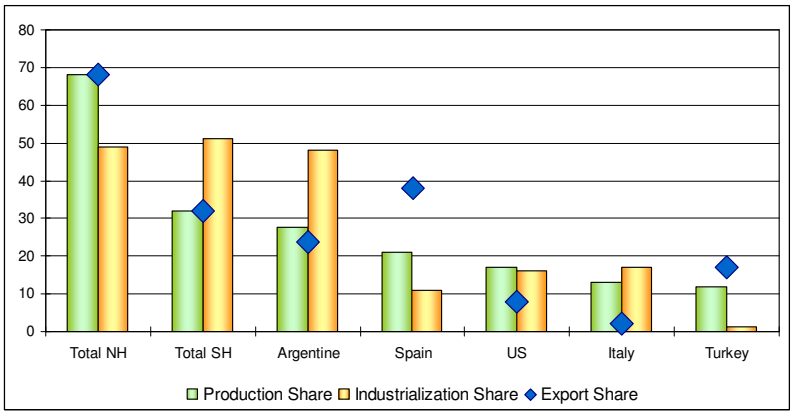
Figure 26 : Argentina's lemon trade cluster



Justification for the lemon case study

According to USDA estimations (2000-2006), the world produces around 4.42 million tons of lemon each year. Five countries represent 92.7 percent of the production (Argentina, Spain, the United States, Turkey, and Italy; see Figure 27).

Figure 27 : Share in the world production, processing and export of lemon by country (2000-2006), in %

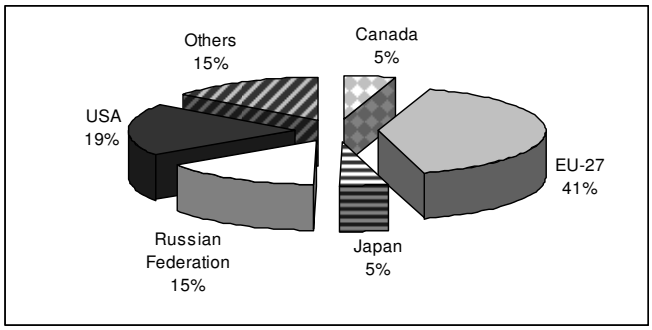


Source: USDA

World exports of fresh lemon in 2008 were 2.4 million tons (US$ 2,073 million). The main exporters are Mexico, Spain and Argentina with 50 percent of sales, followed by the US, South Africa and Turkey (30 percent). Exports represent 60 percent of the Spain lemon production and 30 percent for Argentina.

The main importers are located in the northern hemisphere. The EU, Russia, the United States, Canada and Japan represent 85 percent of world imports of lemon (1 million tons; see Figure 28).

Figure 28 : Main importers of fresh lemon, 2008

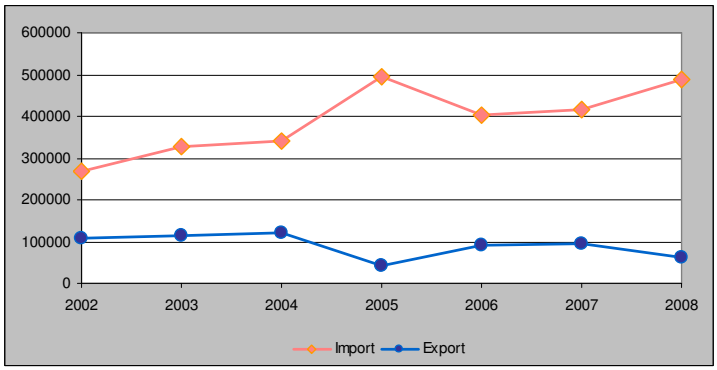


Source: UN COMTRADE

In the EU, Netherlands, Germany and France are the major importers, with 40 percent of total European imports.

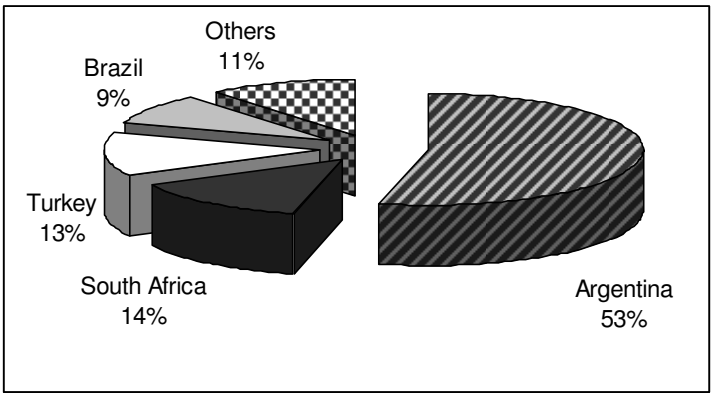
In the last six years, the EU has deepened its position of net importer of fresh lemon (Figure 29), but it has been essentially covered by intra trade competing with Argentina. EU's extra imports represent around 500,000 tons of lemon for US$ 666 million. The main source is Argentina (53 percent) followed by South Africa, Turkey and Brazil (Figure 30).

Figure 29 : Evolution of EU fresh lemon trade (tons, 2002-2008)



Source: UN COMTRADE

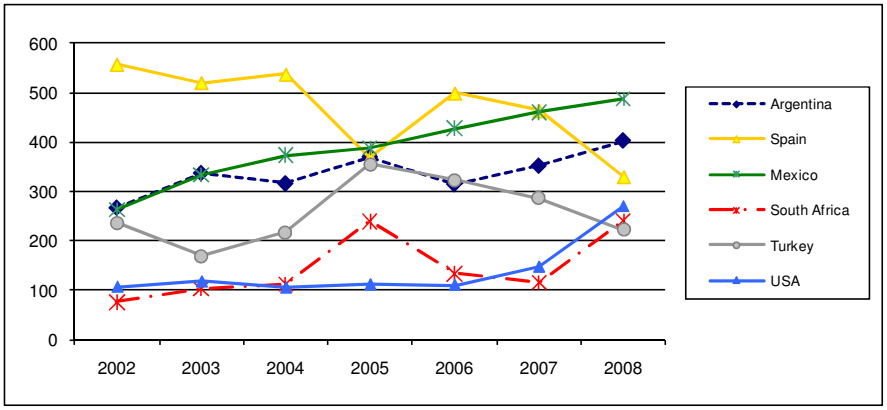
Figure 30 : EU imports by country (2008)



Source: UN COMTRADE

In 2009 Mexico and Argentina were the main global suppliers of lemons moving Spain away from the first place. Mexico and Argentine display growth rates of exports of respectively 84 and 50 percent between 2002 y 2008, while Spain experiences a 41 percent decrease. South Africa and the US have considerably increased their lemon exports with respectively +218 and + 154 percent on the period (Figure.

Figure 31: Evolution of fresh lemons exports by country (tons, 2002-2008)



Source: UN COMTRADE

Russia is the main destination of the Argentine lemon exports (233,177 tons), followed by the EU. In all cases, the sales have increased in absolute values and in total export share (Table 24)

Table 24 : Main markets for Argentina lemon exports.

	2002		2007		Variation 2007/02
	Tons	%	Tons	%	%
Russia	17,524	12.0	35,924	15.4	105
Spain	12,257	8.4	26,613	11.4	117
Italy	16,979	11.6	26,467	11.4	56
Netherland	12,937	8.9	26,297	11.3	103
Canada	7,059	4.8	14,159	6.1	101
All destinations	**146,000**	**100.0**	**233,177**	**100.1**	**60**

Source: INDEC

The main markets for Spain are other EU countries. Russia and Switzerland (Which represent only 10% of total exports) are the main destinations outside the EU.

Table 25 : Main markets for Spain lemon exports

	2002		2008		Variation 2002/2008
	Tons	%	Tons	%	%
France	94,125	16.9	68,563	20.8	-27
Germany	113,125	20.3	73,452	22.2	-35
United Kindom	42,244	7.6	34,466	10.4	-18
Poland	74,784	13.4	41,144	12.5	-45
Italy	47,108	8.4	21,720	6.6	-54
INTRA EU	**371,386**	**66.5**	**239,345**	**72.5**	**-36**
Russia	34,319	6.1	16,213	4.9	-53
Canada	1,239	0.2	159	0.0	-87
US	21,499	3.9	592	0.2	-97
Switzerland	9,980	1.8	4,315	1.3	-57
EXTRA EU	**67,037**	**12.0**	**21,279**	**6.4**	**-68**
All Destinations	**558,234**	100.0	**330,171**	**100.0**	**-41**

Source: UN COMTRADE

Inside the EU Italy is the main market where Spain and Argentina compete with respectively 60 and 20 percent of the total Italy imports. Outside EU the main destination is Russia for both competitors. It is also noteworthy that while Spain has decreased sales to these destinations, Argentina has increased them.

Lemon's SPS measures

Citrus pests are recurrent and eradication and prevention of infestation or re-infestation is often the only viable alternative to avoid potentially significant crop losses. Unfortunately pest eradication in citrus plantations is difficult to achieve, and in some cases uprooting trees in extensive areas is the only effective solution (e.g. canker and citrus variegated chlorosis, or CVC). In the recent past there had been an increasing number of trade disputes as a result of bans on citrus imports based on phytosanitary policies.

1997 Argentina vs. European Community: the EC claimed that Argentina could not demonstrate the equivalence of control measures with those of the European Community in relation with citrus canker. The consultation was successfully resolved the following year with the possibility of recognizing systems of certification equivalent to those of the European Community.

1999 Argentina vs. United States: negotiations were held on the postponement of the United States measures concerning the export of citrus produced in northwest Argentina. An agreement was reached the following year. However, the protocols which form the basis for the agreement have been challenged in the United States courts, creating an impediment to Argentine citrus (primarily lemon) sales to the United States.[3]

2001: Clementines from Spain were banned by USDA after Mediterranean fruit fly larvae were found in several shipments already in the United States.

[3] *The present assessment follows a quantitative assessment done by APHIS in 1997 for the import of citrus (grapefruit, lemons, and oranges) from Argentina. The previous assessment provided the basis for a program authorizing the import of citrus from Argentina beginning in 2000. In 2001, the authorization was successfully challenged in court and imports of citrus from Argentina were suspended.*

2002: The USDA (APHIS) amended its regulations to allow the importation of clementines from Spain under strict conditions. The new requirements impose the establishment of a Mediterranean fruit fly management program by the Spain's government, severe inspections and cold treatment, as well as other conditions designed to impede the introduction of the Mediterranean fruit fly.

2002 European Community vs. United States: APHIS banned imports of clementines from Spain due to detections of Mediterranean fruit fly larvae. Based on new agreed protocols for cold treatment, trapping and spraying, physical examination of shipment, exports from the European Community (Spain) to the United States have resumed.

The United States phytosanitary agency in charge of reviewing and defining phytosanitary import requirements, APHIS, is presently assessing the situation in Argentina. In a recent document listing illnesses and diseases affecting lemons in the region of Tucuman, the fruit fly has been introduced, much to the surprise of Argentina's growers and exporters. This implies cold treatments which affect the quality of lemon fruits.

3.4 Case study on apples (0808) – S. Drogué and E. Gozlan

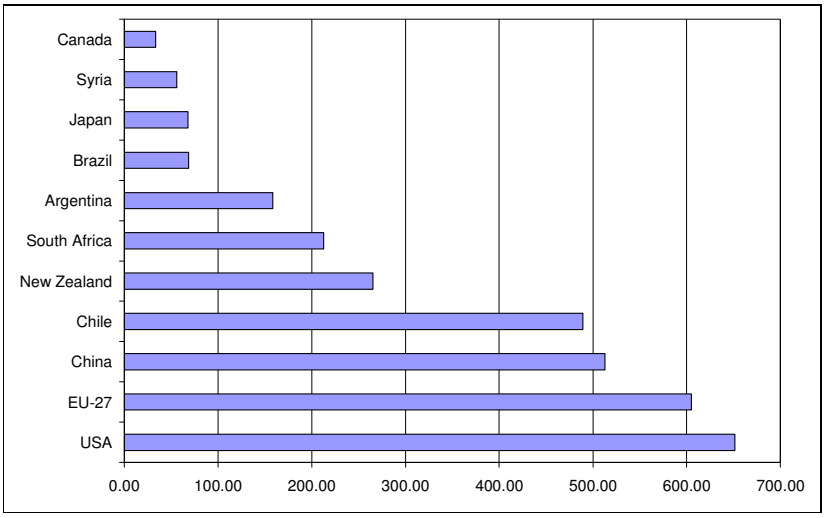
Objective and research question

The objective of this case study is to analyze the effects of SPS and other non-tariff measures the EU and its main competitors face on certain markets when they export apples.

Justification for the apples case study

Why apples are an important product for the EU? On the apples global market few players are involved. China, the EU, Chile and the USA capture the lion's share of 75 percent of the apples world exports. In 2007 the USA was the first world provider of apples with US$ 651 million and 6.6 million tons of apples sold followed by the EU (US$ 605 million of extra-EU exports).

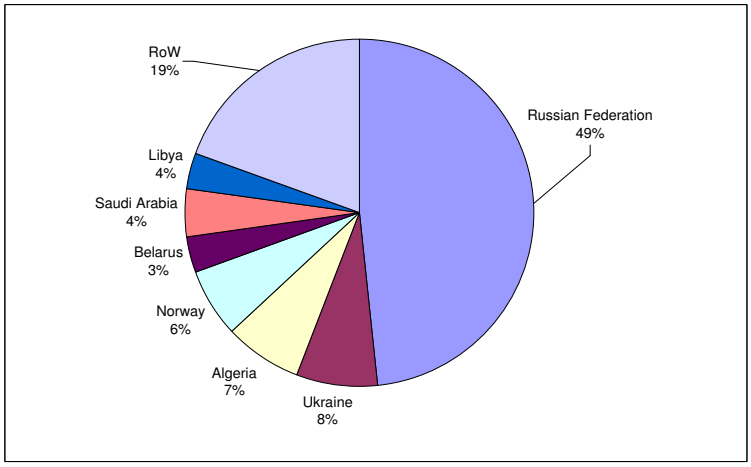
Figure 32 : Value of apples exports in US$ million, 2007, selected countries



Source: UN COMTRADE

Concerning the import side, the EU and Russia distinguish themselves as they represent almost half of the total imports of apples. In 2007 the first apple trade partner of the EU27 was the Federation of Russia with US$ 287 million of exports.

Figure 33 : Major EU's destinations of apples exports, 2007



Source: Eurostat

NTMs faced by the EU when exporting apples

In order to identify the SPS/TBT barriers faced by the EU when exporting apples we rely on two sources. First one is a French study (Bonetti 2007) and the second one is the information contained in the Market access database.

Bonetti has shown that most countries import apples from the EU without any particular SPS constraint but Japan, China, Taiwan, Mexico, the United States, Australia, South Africa, Philippines and South Korea. We then have compared these results with those contained in the Market Access Database. Following the latter we find that only Japan, China, Taiwan, US, South Korea and the Russian Federation have SPS constraints on fruits in general and/or

apples in particular. We will then focus on the EU and China as major competitors exporting to Asia, the United States or Russia.

Between the EU and **Japan** the problems are threefold. First, the Japanese approval procedures for imports of new varieties and types of fresh fruit and vegetables are very long (2-3 years), costly and lacking in transparency. The Commission works for the simplification and greater transparency of procedures for authorising the import of new varieties and types of fresh fruit and vegetables as well as the transmission of procedures for authorising the import of new varieties and types of fruit and vegetables.

Second, Japan does not recognise that a single market for plant products exists in the EU and will not implement the provisions of the SPS agreement of the WTO on regionalization with respect to the EU. Each member state must therefore negotiate bilaterally and pass through the entire lengthy approval procedure from the very beginning for each new variety or type of fruit or vegetable which it wishes to export to Japan. Indeed, often a special approval procedure must be passed through for each individual area of each country. The Commission would like the recognition of the EU as a single market for plant products, with application of the principle of regionalization in the determination of disease status, thus eliminating the need for separate approvals (one for each Member State).

Finally, Japan operates a system of zero tolerance for all pests not included on its list of non-quarantine organisms. This list is incomplete and many common insects which are present both in Europe and Japan, such as aphids and mites, are not included on this list. This means that fruit and vegetables which have such non-harmful insects on them are treated by Japan in the same way as if they were infested by harmful organisms and have to undergo needless fumigation. The Commission would like the extension of the Japanese list of non-quarantine organisms to include all non-harmful organisms found in fruit and vegetables.

Regionalization is also a concern when exporting fruits to **Korea**. Phytosanitary requirements for agricultural products significantly hamper access to the market and require very costly and time consuming efforts to collect up to date information on market access conditions for these products. Korea applies the very lenghty 8-step procedure for imports of plant products.
Korea refuses to apply the regionalization principles of the WTO SPS Agreement, and still insists on treating each of the Member States separately and individually on phytosanitary matters.

The MADB relates that “while many pesticides and veterinary medicines are recognised as being not harmful for animals and humans by international bodies (with permitted MRL's) and are widely used in several countries worldwide, they are not permitted in the **Federetion of Russia**. Even for allowed substances, Russia applies very strict MRL's which are far lower than the recognised limits set by international bodies. These limits are sometimes at such a low level, that even laboratory analysis could not quantify them and thus they correspond to a practical ban. In addition, an extrapolation to pesticides from one group of commodities to another group of commodities is done without any scientific basis. Many of Russia's MRLs diverge from the relevant international standards and lack scientific science-based explanations for the low levels set.

Restrictions on the import of certain fruits into the **United States** are in place, and include - on a country by country basis - Pest Risk Analysis (PRA), stringent inspection programs, audit of cold treatment for certain varieties. Member States have exchanged several letters

over the years with the USDA/APHIS requesting the access to the USA market of certain fruits. Applications have been pending for years, awaiting PRA, setting of requirements and update of import legislation. Several Member States have been unsuccessful in getting information from USDA/APHIS on the status of their applications, or achieved no progress at all. The European Commission has provided USDA/APHIS with a prioritised list of applications from Member States. The USDA/APHIS has recently provided information on the status of applications on the EU-list, including which information would be needed to handle the applications.

The US Public Health Security and Bioterrorism Preparedness and Response Act was signed into law on 12 June 2002. The measure is intended to address security risk surrounding the supply of foodstuffs. The implementation of the so-called Bioterrorism Act (BTA) necessitates the registration of all foreign facilities that supply food to the United States, prior notification of all shipments to the United States, record-keeping by foreign enterprises to allow traceability of foods, and procedures for the administrative detention of suspect foods. Products imported from unregistered food facilities or for which inadequate notice is given cannot be imported and will be removed to secure storage.

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Table 26: A summary of the case studies

	Partners	Product coverage	NTMs targeted	EXPORT country	IMPORT country	Methodology applied	Division of labour between teams
Meat (6 cases)							
1.1	INTA, Argentina	Beef 0201 0202	Foot and Mouth Disease status and application of regionalization principles by importers; authorization of establishments and producing areas; veterinary certification; border inspection; traffic and internal compliance. Third country effects of the 2009 EU-US settlement in the beef hormone dispute.	Argentina vs. EU (= Germany)	Russia		
1.2	USYD, Australia	Pigmeat 0203	Australian quarantine regulations: revisions that settled the 2003-07 WTO dispute between EU and AU NTM data: changes to the rules over time (monthly?) specific to exporting countries and possibly also product-specific	EU (= Denmark) vs. US, Canada, (Brazil)	Australia		
1.3	UBonn, Germany Otsuki and Kimura, Japan	Poultry meat 0207, 1602-31-32-39	Import bans and requirements related to bird flu. Scenarios on alternative risk-mitigating strategies than import ban for low- pathogenic and high-pathogenic avian influenza, for cooked and uncooked meat. Example: wider application of regionalization principle in Japan to EU exports	EU vs. US Brazil China	Japan Russia		
1.4	CCAP, China	Poultry 0207	Various NTM methods, including the new regulations, new standard on Veterinary medicine, and Import bans related to bird flu. NTM data: Changing rules, regulations of NTM and import ban related to bird flu after China's WTO accession	EU vs. New Zealand, Australia, US	China		
1.5	RIS, India	Poultry and Eggs	To be determined	EU vs. US Australia	India		
1.6	ESALQ-SP, Brazil	Chicken	NTM data: SPS and TBT notifications and information from public and private national institutions (classified and organized according to MAST -2008)	EU vs. Brazil	Russia		

Dairy (4-5 cases)											
2.1	Ulaval, Canada		Cheese / dairy-based ingredients 0406 -10,-20, -30, -40, -90		Canadian compositional standards for cheese and mandatory import licensing NTM data: costs of compliance for producers (other data: trade barriers in cheese market; product composition of exports, domestic market structure in production and processing)		EU Vs. New Zealand Australia US	Canada				
2.2	U of Otago, New Zealand		Cheese 040690		Overall non-tariff measures, not NTM-specific		EU, vs. New Zealand, Switzerland, Australia	US				
2.3	SAU, Slovakia		Dairy		Maximum residue levels for veterinary drugs and pesticides. Russian standards are not bound by WTO principles and more stringent than international recommendations. Other issue: policy support for Russian dairy farming. NTM data: selection of relevant NTMs on basis of questionnaire and interviews with exporters and regulatory agencies, including a ranking based on perceived compliance cost		EU	Russia				
2.4	CCAP, China		Dairy 0401-0406		Various NTM methods, including the new regulations, new standard on Maximal Residual Levels (MRL) on Veterinary medicine. NTM data: Changing rules and regulations related to NTM after China's WTO accession		EU vs. New Zealand, Australia, US	China				
join 1 of above	WUR (LEI), Netherlands		Dairy ?		To be determined		To be determined					

Fruits & vegetables (4 cases)												
3.1	IKAR, Russia		Apples 0808 Tomatoes 0702		Russian requirements on pesticide MRLs and other contaminant limits including conformity assessment procedures (pre-listing of products and firms, certificates or origin), phytosanitary rules, customs clearance procedures (time as a trade barrier), transaction costs for trade within the Russian federation.		EU	Russia				
3.2	Virginia Tech, USA		Citrus 0805		US, EU and other importers' phytosanitary requirements, primarily related to control for citrus canker, medfly and other citrus pests. Equivalence of measures; effects of revised regulations NTM data: Datasets on US import requirements and requirements faced by exports developed by VT, Purdue University and USDA; country regulations		Spain vs Argentina and other southern hemisphere countries, US and others	US, Japan, EU and others				
3.3	INTA, Argentina		Lemon 080550		US phytosanitary requirements, primarily related to control for Mediterranean fruit fly, huanglongbing (citrus greening) and other pests/diseases. NTM database: USDA/APHIS documents		Argentina vs. EU (Spain)	US				
3.4	INRA, France		Apples 0808		Phytosanitary requirements: control of non-quarantine organisms and regionalization (Japan, Korea); pest risk analysis (US); maximum residue levels for pesticides (Russia, standards not bound by WTO principles and more stringent than international recommendations); technical barriers under US Bioterrorism act. NTM data: Bonetti 2007, EU market Access Database		EU vs. China	US Russia Japan Korea				