

Competitiveness of the EU poultry meat sector



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Preface

Companies in the EU poultry meat supply chain have to comply with European legislation on animal welfare, food safety and environmental protection. While the legislation aims to guarantee a qualitatively good poultry production, it also confronts the sector with extra costs. Countries outside the EU do not have the same extensive legislation. At the same time, the EU is involved in multilateral negotiations with the World Trade Organisation (WTO) and bilateral negotiations with different partners including India, Ukraine, Mercosur and the USA, both of which are intended to further liberalise trade by further reducing or abolishing import levies. This causes concerns within the EU on its competitiveness in the poultry meat industry.

In this report the Agricultural Economics Research Institute (LEI), an independent research institute of Wageningen UR (University and Research) in the Netherlands, presents the results of a study on the competitiveness of the EU poultry meat sector. The production costs for poultry meat are calculated for several EU and non-EU countries. Based on these data, several scenarios are described and their effect is calculated to illustrate the impact of lower import levies and changes in exchange rates.

The study was initiated and funded by the Association of Poultry Processors and Poultry Trade (AVEC) in the EU. The authors thank AVEC for providing data and for commentary on the draft report.

L.C. van Staalduinen MSc
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Summary

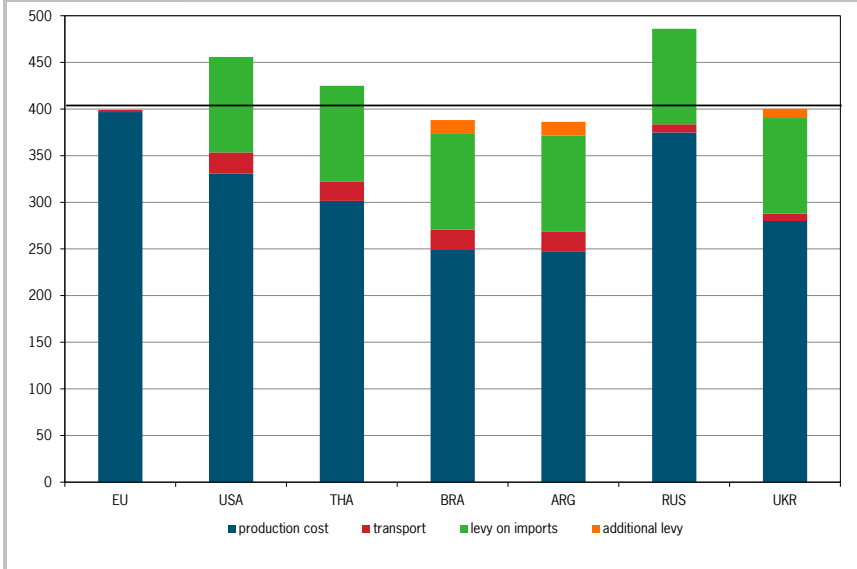
S.1 Key findings

EU poultry meat producers have to comply with legislation on environmental protection, animal welfare and food safety. This legislation has increased the production costs of poultry meat. At the same time the EU is negotiating with other countries or groups of countries to liberalise trade in agricultural products. This report examines how lowering import levies impacts the competitiveness of the EU poultry industry. The results show that the offer price of broiler breast fillet in 2011 of some third countries was already below the average EU price. Despite the current import levy on breast fillet, these third countries can be competitive in the EU market. In a scenario with 50% lower import levies and no additional levy, Brazil, Argentina, the USA, Ukraine and Thailand have a lower offer price for breast fillet than the EU poultry meat industry.

The results for the situation in 2011 are presented in Figure S.1 and Figure S.2. Figure S.1 lists all cost components for breast fillet in order to compare the EU average offer price of breast fillet to that of six selected non-EU countries. The figure clearly shows that import levies protect the EU from imports from the non-EU countries. However, even with the substantial import levies, the offer price of breast fillet from Brazil and Argentina is below the offer price of EU producers.

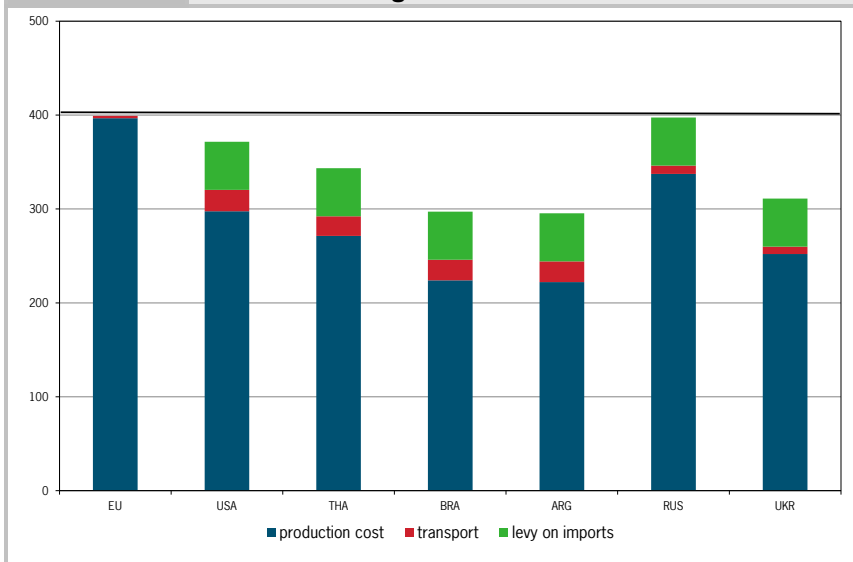
Figure S.1

Offer price of breast fillet in Germany from EU average (horizontal line) and non-EU countries in eurocents per kilogram in 2011



The combined consequences of a 50% lower levy on imports (and no additional levy) and 10% lower exchange rates are indicated in Figure S.2. In this worst-case scenario, all third countries obtain a competitive to strongly competitive position in the EU market for breast fillet, and they will export large volumes of poultry meat to the EU.

Figure S.2 Offer price of breast fillet in Germany from EU average (horizontal line) and non-EU countries in eurocents per kilogram with 50% lower import levy, no additional levy and 10% lower exchange rate



S.2 Complementary findings

In 2012, the poultry industry in the EU-27 produced 12.9m tonnes of poultry meat, of which 76% was broiler meat, employed an estimated 303,000 people, and had a production value of €32bn.

The EU is an important player in international trade of poultry meat. In 2012, the EU-27 exported 1.430m tonnes poultry meat with a value of €2.064bn (average value €144 per 100 kg) while it imported 0.844m tonnes with a value of €2.202bn (average value €261 per 100 kg).

In the EU poultry meat producers have to comply with European legislation. The additional costs of EU legislation on farm level were estimated to be 4.8 eurocents per kg of live weight (5.1% of the total production costs in 2011). Table S.1 gives an overview of the regulation and political and societal interest of environmental, food safety and animal welfare issues in some non-EU countries.

Tabel S.1. Regulation in selected non-EU countries (Brazil, Argentina, USA and Thailand)			
	Political and societal interest	Regulation in place	Situation in current practice
<i>Environment</i>			
Manure disposal	Medium	Differs ¹	Most farmers receive revenues from manure
Ammonia emission	Low	No	No measures taken to limit emission
<i>Food Safety</i>			
Zoonosis control	Medium	Differs ²	Limited action
Meat-and-bone-meal	Low	No	Meat-and-bone-meal is used
Antibiotic use	Differs	No	Growth promoters commonly used
GMOs	Low	No	GMOs are used
<i>Animal Welfare</i>			
Stocking density	Low	No	Bird densities are relatively low

The production costs of broiler meat have been calculated for nine EU countries. After slaughter the production cost for these countries ranged from 154 to 182 eurocents per kg of carcass with an average of 166 eurocents per kg. In comparison to EU countries, the production costs after slaughter are significantly lower in most non-EU countries such as Argentina (71% of EU average), Brazil (72%), Ukraine (77%), USA (80%), Thailand (84%) and Russia (92%).

The EU is a large importer of poultry meat. Imports of breast fillet mainly come from Brazil and Thailand. Salted breast fillet is imported within quota at an import levy of 15.4%; 210,000 tonnes in 2012. Cooked breast fillet is imported within quota at an import levy of 8%; 237,000 tonnes in 2012. Natural breast fillet is a small quota and imports occur outside the quota. At import, an import levy of €1.02 per kg has to be paid with in recent years an additional import levy (safe guard) of €0.30 to 0.40 per kg. Despite these high import levies, the

¹ Regulations in some regions, for example in the USA.

² Regulations in some countries, for example in the USA or only export oriented companies.

poultry meat imports are competitive, and in 2012, 104,000 tonnes of natural breast fillet was imported. After the introduction of import quotas in 2007, the total imports of poultry meat have not further increased.

S.3 Methodology

In this report, LEI Wageningen UR researched the production costs of poultry meat in nine EU countries: the Netherlands (NL), Germany (DE), France (FR), the United Kingdom (UK), Italy (IT), Spain (ES), Denmark (DK), Poland (PL) and Hungary (HU), and six non-EU countries: the United States of America (USA), Thailand (THA), Brazil (BRA), Argentina (ARG), Russia (RUS) and Ukraine (UKR). In all countries, data were collected on prices (feed, day-old chicks), technical results (growth rate, feed conversion, mortality), investment (poultry house) and other costs (interest rate, labour, manure disposal). For slaughterhouses, data were collected on investment in buildings, equipment and labour costs. The base year for the data was 2011. The total costs were converted to euros with the average exchange rate in 2011.

Based on the situation in 2011, three scenarios were developed:

- a change in import levy for breast fillet. A 50% reduction of the basic levy and no additional levy to illustrate the result of any multi- or bilateral agreement of the EU;
- lower exchange rate for the currency of the non-EU countries. In the scenarios, a 10% lower exchange rate was assumed. An analysis of the exchange rates showed that this is a realistic scenario for some non-EU countries;
- combination: 50% reduction of the import levies plus a 10% lower exchange rate.

1 EU legislation

1.1 Introduction

This chapter provides an overview of legislation in the EU. Poultry farmers and other food business operators in the poultry meat chain in the EU have to comply with this European legislation. This legislation is the translation of societal and political choices made in the EU and its standards and demands may exceed international standards and practices. Most EU legislation relates to environmental protection, animal welfare and food safety. Paragraph 1.2 gives an overview of the most important legislation. Paragraph 1.3 presents the economic impact of the legislation while Section 1.4 gives a short overview of the current situation of (welfare) legislation in some third countries. Although all links in the supply chain are confronted with EU legislation, this chapter mainly focuses on the situation and consequences at farm level.

1.2 EU legislation

This section briefly presents the EU legislation that is directly relevant to the poultry meat sector. Some countries choose to go beyond EU standards by implementing more stringent national or regional legislation, which is not, or just briefly, discussed in this chapter. A report of the European Parliament, written by a group of research institutes, gives an overview of EU legislation related to the livestock sector: beef cattle, pigs, sheep and poultry (Chotteau et al., 2009).

Environmental protection

The EU has taken measures to limit the pollution of land, water and air. The main environmental legislation affecting poultry production in the EU are the Nitrates Directive and the Integrated Pollution Prevention and Control Directive (IPPC Directive). The Nitrates Directive (91/676/EC) aims to control pollution and protect water quality in Europe, by preventing nitrates from agricultural sources from polluting ground and surface waters and by promoting the use of good farming practices. The Nitrates Directive forms an integral part of the Water Framework Directive and is one of the key instruments to protect waters against agricultural pressures. The Directive has established action pro-

grammes to be implemented by farmers, such as limitation of fertiliser application and/or a maximum amount of livestock manure that can be applied per hectare per year (170 kg of nitrogen). Some countries have additional national environmental legislation to limit manure spreading to certain periods or specific soil types. This is especially relevant in areas with a high concentration of pigs and poultry, such as the south and east of the Netherlands, Flanders in Belgium, Bretagne in France, Catalonia in Spain, and the Po valley in the north of Italy. Because of this legislation poultry farmers in these areas have to pay manure disposal costs (Van Horne, 2012).

The IPPC Directive (2008/1/EC) applies to larger farms with more than 40,000 birds. The aim of the IPPC Directive is to apply the best available techniques to prevent or to reduce ammonia or other emissions to air, land and water from these activities, since pollution from poultry houses need to be controlled. The Directive requires these farms to have a production permit and to undergo an environmental impact assessment. A fee is charged to cover the costs of the assessment. The Directive also requires an odour or noise management plan in case of potential odour or noise complaints (Van Wagenberg et al., 2012). In addition, Directive 2001/81/EC gives National Emission Ceilings to ammonia emission for every member state. Some countries, such as the Netherlands and Germany, have additional national regulations to reduce ammonia emissions from poultry houses.

EU countries have to meet limit values for certain substances to ensure air quality, following Directive 2008/50/EC. The Directive offers 3- or 5-year extensions to comply with the limit values based on conditions and the assessment by the European Commission. Several EU Member states will have to take measures to reduce emissions of fine dust from the most important sources, such as poultry houses, in which the dust arises from feathers, bedding material and manure (Aarnink and Ellen, 2008). National authorities can set emission standards for fine dust from poultry houses based on the Best Available Techniques (BAT).

On 27 October 2003, the European Union's Council of Ministers adopted The Energy Taxation Directive (2003/96/EC), restructuring the European Community framework to tax energy products and electricity. The Directive widens the scope of the EU's minimum rate system for energy products, previously limited to mineral oils, to all energy products, including coal, natural gas and electricity. The taxation leads to a rise of energy prices for broiler farmers, resulting in higher costs of heating and mechanical ventilation.

Food safety

The poultry meat industry has to adapt rules of hygiene, traceability and labeling, because foodstuffs of animal origin may present microbiological and chemical risks. The EU has extensive food safety legislation based on risk analysis, most importantly the General Food Law (Regulation (EC) No 178/2002) and the hygiene package (Regulations (EC) No 852/2004, 853/2004, 854/2004 and 882/2004). This legislation states that food business operators such as farmers have the primary responsibility for food safety. Farmers are specifically affected by legislation on implementing good agricultural practices and Salmonella control. Farmers are also confronted with higher feed costs as a result of EU legislation.

For the poultry meat sector, the Zoonoses legislation is especially relevant. Zoonoses Directive 2003/99/EC and Regulation 2160/2003 regulate sampling, monitoring and control measures. Between member states, there is a large variation in Salmonella prevalence. In response to the EFSA baseline study, each member state had to make a plan to reduce the Salmonella prevalence in poultry meat. The legislation ensures that proper and effective measures are taken to detect and to control Salmonella and other zoonotic agents at all stages of production, processing and distribution, particularly at the level of primary production, including in feed.

The European legislation on animal feed provides a framework to ensure that feedstuffs do not endanger to human or animal health or the environment. The legislation sets rules on the circulation and use of feed materials, requirements for feed hygiene, rules on undesirable substances in animal feed, legislation on genetically modified food and feed, and conditions for the use of additives in animal nutrition. For example, in the EU the use of meat-and-bone meal is banned. The consequence is higher disposal costs for slaughterhouses and higher costs for poultry feed. Furthermore, in January 2006, the EU banned growth-promoting antibiotics in animal feed. In addition, the European Commission has launched an EU strategy to combat the threat of antimicrobial resistance to human, animal and plant health. The strategy includes phasing out of antibiotics for non-medical use in animals, and covers a range of actions at EU and national level in the areas of data collection, surveillance, research and awareness-raising. A large proportion of protein sources for poultry feed is imported from outside the EU. An increasing share of world production of soya crops is from genetically modified hybrids. The asynchronous EU approval of GM crops, coupled with the operation of almost zero tolerance, is negatively affecting the EU supply of feed ingredients (Backus et al., 2008), resulting in higher feed costs.

Animal welfare

All member states have ratified the European Convention for animal protection with principles relating to animal housing, feed and care appropriate to their needs (Council Directive 98/58/EC). The aim is to spare animals all unnecessary suffering in three main areas: farming, transport and slaughter. Minimum animal welfare standards have been established to protect and to avoid competition distortions between producers in various member states. The most important standards are concerned with natural behaviour, space, feed and water supply, lighting, surgeries, veterinary aid and good stockmanship. European legislation forms the basis, partly complemented by national top-ups (Van Wageningen et al., 2012). Directive 2007/43/EC establishes minimum rules for the protection of chickens for meat production. This directive aims to provide the chickens with a good level of welfare and health under good indoor climate conditions. An important part of this directive is setting a maximum stocking density of 33 kg/m², or a maximum of 39 to 42 kg/m² if stricter housing conditions and welfare standards are met and the mortality rate of at least seven consecutive flocks is under a certain target value. The new legislation establishes several other conditions, such as lighting, litter, feeding, and ventilation requirements, to ensure better animal welfare. The Directive also provides the Commission with the possibility to introduce further measures in the future, based on the scientific data and practical evidence collected by the Member States.

1.3 Economic impact of EU legislation

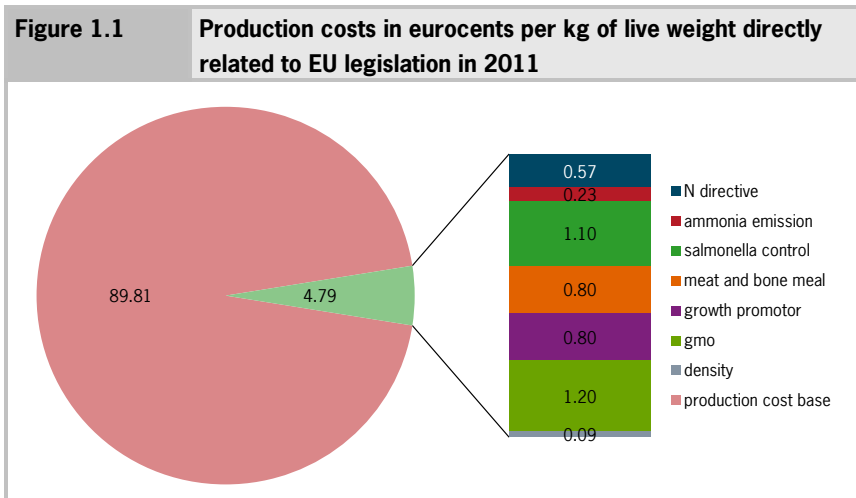
The poultry sector is governed by EU legislation and its implementation almost always leads to extra costs. The poultry meat sector has to cope with the additional costs related to environmental protection, food safety and animal welfare regulations. These additional costs were estimated for the following aspects:

- *Environmental protection*
 - Manure disposal costs, as result of the Nitrate directive.
 - Reduction of ammonia emission in manure application, during manure storage and in the poultry house.
- *Food safety*
 - Salmonella control. Costs of hygiene measures, sample collection, testing and vaccination.
 - Meat-and-bone meal (MBM). The ban on meat-and-bone meal in the EU results in higher feed costs.

- Antibiotic growth promoters. The ban on the use of antibiotic growth promoters results in higher feed costs.
- Genetically Modified Organisms (GMO). The strict rules in the EU on the use of GMO crops result in higher feed costs.
- *Animal Welfare*
 - Stocking density. Additional housing costs to regulate the maximum live weight per square meter poultry house.

The additional costs for poultry farms have also been estimated for all these measures. These estimates are based on research done in the Netherlands (Van Horne, 2013). For all measures the average situation for all EU countries is given. However, the actual situation can differ per country or per region. For example, manure disposal costs are high in regions with a large number of poultry farms and there are low or no costs in regions with few poultry farms. In some EU countries other regulations can be relevant, which are not mentioned in the list above, such as the energy tax in the Netherlands, resulting in higher cost for heating and electricity, and regulations on foot pad lesions (dermatitis) in Denmark and Sweden.

Figure 1.1 gives all cost components of the EU legislation relating to poultry meat. The additional costs directly related to EU regulations are estimated to be 4.79 eurocents per kg live weight. This is 5.1% of the total production costs in 2011.



EU legislation is also creating additional costs for slaughterhouses and other companies in the supply chain. No detailed calculations are available on these costs, but legislation on Salmonella control and the ban on meat-and-bone meal (extra disposal costs for slaughter offal) certainly result in higher costs for slaughterhouses.

During the coming years more European and national legislation will come into effect which can further increase the production costs of poultry meat. One clear example of this is the origin labelling. As a result of Regulation 1161/2011 of the European Parliament and the Council, the EU has mandated that all unprocessed poultry meat must be labelled with its country of origin. This new legislation will confront most companies with additional costs (Baltussen et al., 2013). Regulation 1099/2009 on stunning poultry has been in effect since 1 January 2013 and impacts slaughter costs. On a national level, additional regulations have already been implemented or will be implemented on several topics in the coming years, including legislation on the limited use of antibiotics (e.g. the Netherlands, Denmark), reduction of fine dust emission (Germany, the Netherlands), reduction of footpath dermatitis (e.g. the Netherlands, Sweden, Denmark) and reduction of the *Campylobacter* prevalence (e.g. UK).

1.4 Situation in some third countries

Several reports give an overview of legislation in selected third countries. Van Wagenberg et al. (2012) extensively studied the standards on food safety, environment and animal welfare in several non-EU countries. A study at Wageningen UR (Bracke, 2009) focused on animal welfare regulations and husbandry standards in the poultry sector with special attention for the broiler sector in Brazil, Thailand and the USA. More recently Van Horne (2012) mapped the situation in the USA, India, Ukraine and Argentina in the egg layer sector.

In general, non-EU countries do not have any or have limited legislations on environmental protection, food safety, and animal welfare. In some countries, for example the USA, the standards for food safety and animal health are similar to those in the EU. Nevertheless, standards between the EU and third countries do differ with regard to the type of veterinary drugs allowed and GMOs that are approved.

In most third countries, the standards for the environment, animal welfare and labour conditions are lacking or the standards are lower than they are in the EU. These topics are not incorporated or only marginally incorporated into trade agreements. Internationally accepted conventions or standards exist for food

safety (Codex Alimentarius), animal health (OIE) and labour conditions (ILO), but do not exist for the environment and animal welfare. Food safety and animal health are important aspects in negotiating and establishing trade agreements, but the environment, animal welfare and labour conditions are not or not high on the agenda (Van Wagenberg et al., 2012).

Important exporters of poultry meat on the world market are Brazil, USA, Thailand and Argentina. These countries have no food safety regulations that are similar to those in the EU, such as the ban on meat-and-bone meal and antibiotic growth promoters, and the strict rules on the use of GMO crops as ingredients in poultry feed. In the following sections we summarise the main characteristics of the poultry sector, the export position, the legislation on animal welfare and the production standards for these poultry meat producing countries.

Brazil

Brazil is one of the world's leading poultry producing countries and the number one exporter of poultry meat. The Brazilian poultry industry has been developed around the concept of strategic groups for commodities (chicken) and specialties (processed products), and it is characterised by high productivity and high technology use. The integration model is largely adopted, bringing strict control of the entire supply chain. The poultry industry is mainly concentrated in southern Brazil because of the area's subtropical climate where broilers are often kept in simple open houses. Three types of broiler housing can be distinguished in the area: low density housing (max 30 kg of live weight per m²), middle level density housing (max 34 kg per m²) and high density housing (modern systems with mechanical tunnel ventilation with up to 38 kg per m²). In Brazil, there is not much information available on animal welfare since this topic does not receive much attention in the country. In fact, Brazil has no legislation for poultry on animal welfare at farm level or during transport. A recent French report (ITAVI, 2012) gives an extensive overview of regulation on food safety, animal feed and environmental protection in Brazil.

USA

The USA has a large poultry sector and is the second largest exporter of poultry meat after Brazil. The USA does not regulate welfare standards for farmed animals. In fact, federal legislation in the USA focuses on transport (Farm Bill, 1996), slaughtering methods (update 1958) and 'laboratory animals' (1966), but even this legislation can differ from state to state. More specific the legislation can be different in some states. For poultry, the US regulations dictate that

poultry must be slaughtered using good commercial practices. In the USA, the national chicken council (NCC) has established criteria for animal welfare of broilers. The NCC recommends the guidelines to its members to ensure the humane treatment of animals and to promote the production of quality products. The NCC practices promotes the good health and the welfare of broilers in several areas: education and training of farmers, proper nutrition and feeding, appropriate comfort and shelter, health care, ability to display most normal behaviours, best practices on the farm, catching and transport. Bird welfare at different stocking densities depends on access to feeders and drinkers, ventilation system, litter management and husbandry, but density is advised not to exceed maximum 31.7 kg (birds below 2 kg) or maximum 41.5 kg (birds above 2.5 kg).

Thailand

The Thai poultry industry is an important player within Asia and a leading exporter of poultry meat. Thailand can compete with breast meat on the EU market because dark leg-meat is preferred on the local Thai market. Since 1999, animal welfare in Thailand has been part of Thai government's agenda and farms need to meet government standards. These farm standards are based on the Good Agricultural Practice (GAP) and are aimed to improve the quality and safety of livestock products.

To be certified as export farms, farmers need to meet government criteria addressing not only animal welfare but also environmental concerns (waste management), food safety (e.g. withdrawal time of some pharmaceuticals), disease monitoring, bio safety and traceability. In practice, the government notifications are mostly implemented on a voluntary basis by the sector. However, the regulations are compulsory if farms want to export. On these farms the density should not exceed 34 kg per m² in closed poultry houses (Bracke, 2009).

Argentina

Since 2002, Argentina has become an exporter of broiler meat and ranks seventh among world exporters. Breast meat is the exported product of the highest average value per tonne.

Currently, broiler farming and slaughtering/processing in Argentina are almost completely vertically coordinated. Through contracts, the industry delivers, in most cases, day-old chicks, feed and professional advice to the producers, who contribute the poultry housing and labour. The integrators in Argentina promote modernisation by financing improvements on contracted

farms, and demanding certain technological standards as a condition of entrance for new producers. Argentina has no specific legislation on animal welfare. However, it does have some legislation for related topics such as food safety and product quality, as well as manuals for the broiler sector on Good Practices for the Production that indirectly impose animal welfare criteria. Van Horne (2010), however, concluded that, according to the information collected through the survey and the interviews with producers and businessmen, producers in Argentina do not consciously implement animal welfare practices. In the same study, the average density in the surveyed broiler houses was low: 26 kg per m², which is below the EU legal standards.

2 Structure and employment

2.1 Introduction

This chapter describes the economic importance of the EU poultry meat industry. Paragraph 2.2 describes the total poultry meat production with data on the subsectors broilers, turkeys, ducks and other poultry. Paragraph 2.3 gives information on the structure of the sector with the number of farms and companies in the supply chain. Paragraph 2.4 deals with employment numbers while paragraph 2.5 gives the total economic value of the poultry meat. Finally, paragraph 2.6 describes the importance of alternative poultry meat in the EU.

2.2 Poultry meat production

In 2012, the total poultry meat production in the EU-27 was 12.9m tonnes. This is an increase of 14% compared to 2007. The main poultry meat is broiler meat with a total production of 9.9m tonnes in 2012. There are seven leading producers of broiler meat with each a production of more than 0.7m tonnes: the UK, Poland, Germany, France, Spain, Italy and the Netherlands. Combined, these countries are responsible for 76% of the EU's poultry meat production. Besides broilers, turkeys and ducks are also important subsectors. Total turkey meat production in the EU-27 in 2012 was 1.9m tonnes. The main producing countries of turkey meat are France, Germany, Poland, Italy and the UK, with a common share of 81% of the EU total. In 2012, the total duck meat production in the EU-27 was 0.5m tonnes. Of all EU countries, France is by far the largest producer of duck meat with almost half of the total EU production, followed by Hungary and Germany. These three countries have a common share of 74% of the EU total. Other poultry relates to guinea fowls and goose. Table 2.1 gives an overview of the total poultry meat production, subdivided by broilers, turkeys, ducks and other poultry, for all 27 EU member states.

Table 2.1		EU Poultry meat production (1,000 tonnes carcass weight) in 2012				
	Broilers	Turkeys	Ducks	Other poultry¹	Total poultry	% of EU-27 total
Belgium	246	3	0	1	250	1.9
Bulgaria	78	0	21.7	5	105	0.8
Czech Republic	158	8	4.8	1	172	1.3
Denmark	175	0	0	5	180	1.4
Germany	1,150	387	63.6	75	1,676	13.0
Estonia	14	0	0	2	16	0.1
Ireland	116	9	4.2	0	129	1.0
Greece	160	3	0.2	17	180	1.4
Spain	1,063	111	6.0	71	1,251	9.7
France	1,080	415	235.8	118	1,849	14.3
Italy ²	817	286	14	144	1,261	9.8
Cyprus	27	1	0	1	29	0.2
Latvia	24	0	0	0	24	0.2
Lithuania	77	0	0.3	3	80	0.6
Luxembourg	included in Belgium					
Hungary	280	95	69.6	43	488	3.8
Malta	4	0	0	0	4	0.0
Netherlands	738	27	17	28	810	6.3
Austria	91	25	0.1	14	130	1.0
Poland	1,325	290	17	0	1,632	12.7
Portugal	258	39	8.5	19	324	2.5
Romania ³	340	10	0	0	350	2.7
Slovenia	55	7	0	0	62	0.5
Slovakia	68	14	0.4	4	86	0.7
Finland	99	8	0	0	107	0.8
Sweden	80	4	0	2	86	0.7
United Kingdom	1,400	177	33	0	1,610	12.5
EU-27	9,923	1,919	496	553	12,891	100.0

Source: MEG-Marktbilanz Eier und Geflügel 2013 (Tables 153, 160, 163).

¹ Calculated number: Other poultry = Total poultry – (Broilers+Turkeys+Ducks). In case of a negative number, the total poultry meat production has been adjusted.

² More detailed information from Unaitalia, Italy.

³ More detailed information from UCPR, Romania.

2.3 Structure

A large number of farms produce broilers. The most recent data on broiler farms are from 2010 and published by Eurostat. Table 2.2 shows the total number of broiler farms in the EU-27 and the number of farms with more than 5,000 broilers (professional farms) for each country. According to Eurostat, the total number of broiler farms in the EU-27 was more than 2.2m in 2010. However, almost 20,000 of these farms can be described as professional because they have more than 5,000 broilers. The countries with the highest number of farms with more than 5,000 broilers are France, Spain, Poland, UK and Germany. The data also illustrate that the number of broiler farms is extremely high in Romania, Poland, Portugal and Greece. These countries have the highest number of farms with less than 5,000 broilers. However, these numbers consider both professional farms and backyard farms with small numbers of poultry (1-100 birds).

Table 2.2 Total number of broiler farms per country in the EU-27 in 2010 and farms with more than 5,000 broilers and percentage of EU-27 total

Country	> 1 broiler	> 5,000 broilers	% of EU-27 total (> 5,000 broilers)
Belgium	930	620	3.2
Bulgaria	19,470	140	0.7
Czech Republic	280	130	0.7
Denmark	280	170	0.9
Germany	4,540	1,040	5.3
Estonia	120	0	0.0
Ireland	550	170	0.9
Greece	102,280	630	3.2
Spain	36,570	3,360	17.1
France	41,710	5,780	29.4
Italy	13,200	1,550	7.9
Cyprus	2,570	40	0.2
Latvia	480	0	0.0
Lithuania	13,190	10	0.1
Luxembourg	40	<i>see BE</i>	0.0
Hungary	18,760	250	1.3
Malta	160	40	0.2
Netherlands	640	620	3.2
Austria	1,190	300	1.5
Poland	337,540	2,330	11.8
Portugal	105,010	750	3.8
Romania	1,532,550	300 ¹	1.5
Slovenia	2,910	170	0.9
Slovakia	470	60	0.3
Finland	100	100	0.5
Sweden	180	80	0.4
United Kingdom	1,740	1,040	5.3
EU-27	2,237,460	19,680	100.0

Source: Eurostat (2010).

¹ Information from UCPR, Romania.

In the poultry meat supply chain, different companies are involved in supplies and slaughter/processing. Poultry is slaughtered in slaughterhouses and the meat is further processed into consumer products in processing companies. Hatcheries supply day-old chicks and feed mills supply feed to the farmers. With the exception of this information, no complete data is available on the number of companies in the supply chain in the EU-27. However, we did manage to collect data on the supply chain in some countries and that data is presented in Table 2.3.

Table 2.3		Numbers of companies in poultry/broiler supply chain in the Netherlands (NL), France (FR), Germany (DE), United Kingdom (UK) and Italy (IT)					
	NL	FR	DE	UK	IT	EU-27 (total)	
primary production	620	5,780	1,040		4,545	19,680	
broiler breeders	184 ¹	542 ²		100	309		
hatcheries	16	51		15	174		
slaughterhouses / processing	20 ³	383	114 ⁴	600 ⁵	467	1,970	
feed industry	110 ⁶	192 ⁷	258 ⁸	45 ⁹	400		
other services		57					

Sources: NL: PVE and LEI; FR: ITAVI; DE: German Institute for Economic Research (DIW); UK: ADAS; Italy: Unaitalia, EU-27: Eurostat. Total number of companies in slaughter and processing based on Eurostat, 2007.

¹ LEI estimation.

² LEI estimation.

³ DG SANCO reported 36 poultry slaughterhouses in 2007, approved according to Regulation 853/2004.

⁴ MEG, regarding number of broiler slaughterhouses.

⁵ DG SANCO reported 107 poultry slaughterhouses in 2007, approved according to Regulation 853/2004.

⁶ Number of Nevedi members (total animal feed production; www.fefac.eu).

⁷ SNIa members: 156 (total animal feed production; www.fefac.eu).

⁸ Number of DVT members (total animal feed production; www.fefac.eu).

⁹ AIC members: 116 (total animal feed production; not only compound feed producers; www.fefac.eu).

2.4 Employment

No sources are available on the total employment in the poultry supply chain in the EU-27. However, detailed employment data were available for three main poultry meat producing countries: Netherlands, France and Germany (Table 2.4). Based on these employment numbers and the total broiler meat production, we calculated the employment in every part of the supply chain. Table 2.4 shows that the average employment per 1,000 tonnes of broilers is 4.4 persons in production, 0.7 in hatcheries, 14.4 in slaughterhouses/processing, 1.5 in the feed industry, and 2.1 in other services. The total employment is 23 full-time workers per 1,000 tonnes of broiler meat. The production data of the three countries are given in Table 2.1 being 1,150,000 tonnes in Germany, 1,080,000 tonnes in France and 738,000 tonnes in the Netherlands. The total production of broiler meat in these three countries is 2,968,000 tonnes.

	NL persons	FR persons	DE persons	Average: Persons/ 1,000 tonnes broiler meat
primary production	2,900	6,000	4,285	4.4
hatcheries	300	1,500	500	0.7
slaughterhouses / processing	4,700	16,800	24,400	14.4
feed industry	900	2,000	1,500	1.5
other services	900	2,500	3,200	2.1
Total	9,700	28,800	33,885	23

Sources: NL: PVE and LEI; FR: ITAVI; DE: German Institute for Economic Research (DIW).

We assumed that employment in the EU can best be estimated by using the employment averages in the three countries. Based on these data, we calculated the employment for all other member states. However, for NL, FR and DE, the data from Table 2.4 were used for all links in the production chain.

For broiler meat production, the total employment is 23 persons per 1,000 tonnes of broiler meat produced per year. The employment in the production of ducks is estimated to be substantially higher, namely 37 employees per 1,000 tonnes and in the turkey sector it is slightly lower, approximately

20 employees per 1,000 tonnes produced. For other poultry we assume similar employment numbers as in broiler production. Table 2.5 gives the results for all EU-27 member states.

Table 2.5 shows that the total employment in the EU poultry meat industry is estimated to be almost 303,000 employees, of which 78% in the following seven countries: France (16%), Germany (15%), Poland (12%), United Kingdom (12%), Spain (9%), Italy (9%) and Netherlands (4%). The broiler meat industry provides approximately 77% of the total employment, turkey production 12%, duck production 6% and other poultry production 4%.

2.5 Production value

The production value of EU poultry meat can be calculated by multiplying the total production by the average EU price at the slaughterhouse. In 2012, the total production of poultry meat (Table 2.1) was 12.9m tonnes. The average selling price in slaughter plants (wholesale price for class A chicken, known as '65% chickens') was €1.912 per tonne in 2012. The result is a production value of €24.6bn in 2012. However, this is the economic output of the primary sector and slaughterhouses. After slaughter the poultry meat is further processed. No official data is available on the total production value of poultry after further processing. However, LEI estimates that the value is 30% higher after processing. Based on this estimate, the total production value of poultry meat in the EU-27 in 2012 can be calculated to be €32bn.

Eurostat also gives information on the production value of poultry meat. In the category C1012 'processing and preserving of poultry meat', the production value for 2009 was €26.0bn and for 2010 estimated at €26.9bn. Since 2010 the total output of poultry meat has increased from 12.2m tonnes to 12.9m tonnes. In the same period the broiler price increased from €1.69 to €1.91 per kg in 2012. After correction for the higher output and higher price, the estimate for the production value in 2012 is €32.1bn. A similar approach for 2011 results in an estimated value of €30.3bn. Other researchers calculated the economic output of poultry meat in the EU-27 in 2011 between €30.6bn and €32.5bn (Agra CEAS, 2012).

Table 2.5 Estimated employment in full-time workers in the different links in the broiler supply chain, turkey, duck and other poultry

	Employment EU member states 2012											TOTAL
	Broiler meat industry					Turkeys and ducks			Other poultry		TOTAL	
	Farmers	Hatching	Slaughter	Feed	Other	Subtotal broilers	Turkeys	Ducks	Other	Other		
Belgium	1,083	183	3,538	359	518	5,681	59	0	23	5,763		
Bulgaria	343	58	1,122	114	164	1,801	0	792	122	2,716		
Czech Republic	696	117	2,272	230	333	3,649	157	175	28	4,009		
Denmark	771	130	2,517	255	368	4,041	0	0	115	4,157		
Germany	4,285	500	24,400	1,500	3,200	33,885	7,611	2,321	1,741	45,558		
Estonia	62	10	201	20	29	323	0	0	46	369		
Ireland	511	86	1,668	169	244	2,679	177	153	0	3,009		
Greece	705	119	2,301	233	337	3,695	59	7	388	4,149		
Spain	4,681	790	15,286	1,550	2,238	24,547	2,183	219	1,640	28,588		
France	6,000	1,500	16,800	2,000	2,500	28,800	8,162	8,607	2,729	48,298		
Italy	3,598	607	11,749	1,192	1,720	18,866	5,625	511	3,325	28,327		
Cyprus	119	20	388	39	57	623	20	0	23	666		
Latvia	106	18	345	35	51	554	0	0	0	554		
Lithuania	339	57	1,107	112	162	1,778	0	11	62	1,851		
Luxembourg	included in Belgium											
Hungary	1,233	208	4,027	408	590	6,466	1,868	2,540	1,002	11,877		
Malta	18	3	58	6	8	92	0	0	0	92		

Netherlands	2,900	300	4,700	900	900	900	9,700	531	620	647	11,498
Austria	401	68	1,309	192	133	192	2,101	492	4	321	2,918
Poland	5,835	985	19,054	2,790	1,933	2,790	30,597	5,703	620	0	36,921
Portugal	1,136	192	3,710	543	376	543	5,958	767	310	427	7,462
Romania	2,400	315	5,100	869	531	869	9,215	197	0	0	9,412
Slovenia	242	41	791	116	80	116	1,270	138	0	0	1,408
Slovakia	299	51	978	143	99	143	1,570	275	15	83	1,943
Finland	436	74	1,424	208	144	208	2,286	157	0	0	2,443
Sweden	352	59	1,150	168	117	168	1,847	79	0	46	1,972
United Kingdom	6,165	1,041	20,133	2,948	2,042	2,948	32,329	3,481	1,204	0	37,014
EU-27	44,716	7,533	146,127	2,1398	14,579	2,1398	234,353	37,740	18,111	12,770	302,974

The EU is an important player in the international trade of poultry meat. In 2012, the EU-27 exported 1.430m tonnes of poultry meat with a value of €2.064bn. At the same time, the EU-27 is a large importer of poultry meat (0.844m tonnes with a value of €2.202bn). Table 2.6 gives the development of the import and export in volume and value from 2007 until 2012. It is important to point out that the average value of imports is much higher (€260 per 100 kg) than the average value of export (€144 per 100 kg). More detailed information on imports and exports is given in Chapter 4.

Table 2.6	Import and export of poultry meat of the EU in volume (1,000 tonnes) and value (€1m)					
	2007	2008	2009	2010	2011	2012
volume export	1,017	1,242	1,222	1,264	1,412	1,430
volume import	858	891	862	806	843	844
value export	866	981	1,013	1,582	1,845	2,064
value import	1,703	2,034	1,845	1,958	2,217	2,202

Source: European Commission, February 2013.

2.6 Alternative broiler production

The EU broiler meat sector commonly uses fast growing genotypes broilers to produce poultry meat. These broilers achieve the target live weight of 2 to 2.5 kg in around 5 to 6 weeks. Alternative broiler production that uses slower growing genotypes is increasingly gaining attention in many EU countries. The poultry meat of slow growing broilers is a premium product, and farmers and processors receive a higher market price to compensate for the higher production costs. The conditions and names of the alternative broiler production in the EU are regulated by Regulation EC/543/2008, in which the marketing terms are described. The production of organic broilers is regulated in Regulation 834/2007, including the requirement to use organic feed. These requirements are summarised in Table 2.7.

Table 2.7		Name and conditions for production of alternative broilers, according to EC/543/2008 and Regulation 834/2007 (organic)		
Production system	Minimum age (days)	Maximum density indoor (birds/m²)	Access to outdoor run	
Extensive indoor	56	15	No	
Free range	56	13	Yes, 1 m ² per bird	
Traditional free range	81	12	Yes, 2 m ² per bird	
Free range, total freedom	81	12	Yes, 2 m ² per bird	
Organic	70 to 81	10	Yes, 2 m ² per bird	

The number of farms with free range or organic production is small, except in France, where a large number of farms is involved in alternative broiler production. In organic production France and the UK are the largest producers within the EU. In free range production systems broilers have access to an outdoor area. An example of this type of broiler production is Label Rouge in France, with the following standards: a slow growing breed, a low density indoor and access to an outdoor area. In France, about 12% of all broilers have access to an outdoor range. Although the organic production of broiler meat is growing in EU countries in north-western Europe, it will probably stay a niche market. The market for free range broiler production will probably increase but only slightly (Hiemstra, 2012).

The so-called 'intermediate' market segment or certified broiler production has a position between regular broiler production and organic production. Certified broilers are slow-growing broilers that are kept indoors until they are at least 56 days old. Certified broilers are produced in France ('certifié'), the UK ('Freedom Food') and the Netherlands (one star within the 'Better Life Certificate'). France, the UK and the Netherlands hold a significant position in this production segment, but Germany also has some companies that have started to produce certified broilers. This type of production is expected to grow further in the coming years.

No statistics are available on the exact numbers of alternative broilers in the EU. Industry people estimate the market share of alternative broilers at 5 to 10%. This estimate is based on an estimated 3.5m 'alternative' broiler breeders in the EU, which is around 8% of the total number of broiler breeders in the EU (Hiemstra et al., 2012). The number includes the market for organic and free range broilers, as regulated by EU regulations and directives, as well as the numbers for back yard poultry production in some southern European countries

and private label production, such as Label Rouge in France, Freedom Food in the UK and intermediate extensive indoor in the Netherlands.

3 Production costs of broilers 2011 in selected countries

3.1 Production costs in some EU countries

The production costs of broilers have been researched for the following nine EU countries: the Netherlands (NL), Germany (DE), France (FR), United Kingdom (UK), Italy (IT), Spain (ES), Denmark (DK), Poland (PL) and Hungary (HU). The calculated production costs at farm level are based on the situation in 2011. Of almost all countries average zootechnical (performance) data and economic data (prices) were available. To give some examples: in the Netherlands LEI Wageningen UR is collecting data of broiler farms, in Germany similar data are available from the Chamber of Commerce (Landwirtschaftskammer Niedersachsen) and in Denmark data are collected and published by the Danish Poultry Council (Det Danske Fjerakraaad). For France, the UK and Hungary the data are based on information of respectively the research institute ITAVI, advisory group ADAS and the University of Debrecen. For Poland, Italy and Spain a mix of sources was used to compile the basic assumptions. After calculating the production costs at farm level, we also calculated the costs for slaughter. Section 3.1.2 gives an overview of the production cost after slaughter.

3.1.1 Production costs at primary farm

Figure 3.1 shows the calculated production costs in the selected EU countries and Table 3.2 gives the total production costs and the build-up of the production costs in these countries. Most countries have production costs in the range of 91 to 97 eurocents per kg of live weight. This group includes some main poultry meat producers such as France, Germany, the UK, the Netherlands and Spain. The production costs in Poland are the lowest at 90.2 eurocents per kg of live weight. Italy has the highest production costs with 106.5 eurocents per kg of live weight.

Figure 3.1 Production costs of broilers in eurocents per kg of live weight in nine EU countries in 2011

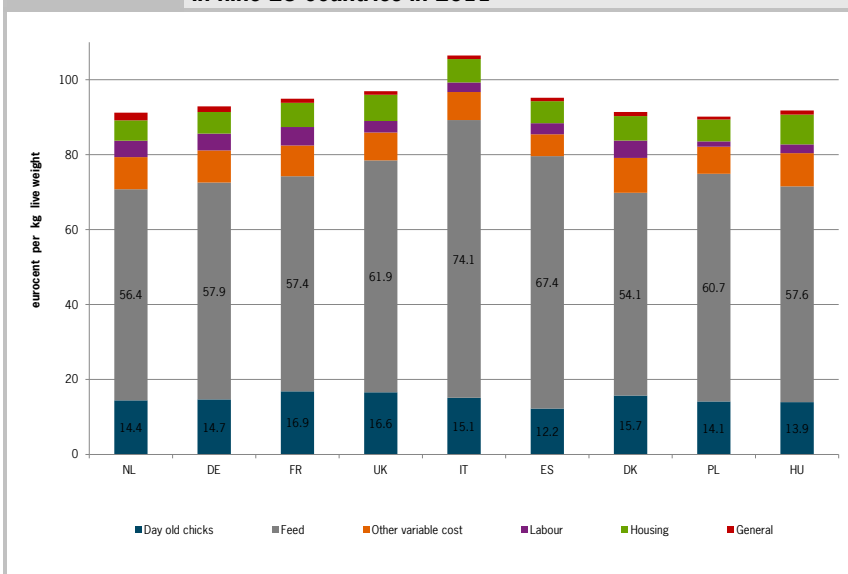


Table 3.1 gives the main assumptions on technical performance and prices. Table 3.2 gives the total production costs and the build-up of the production costs.

	NL	DE	FR	UK	IT	ES	DK	PL	HU
Feed price (€/100 kg)	33.8	34.5	32.8	35.4	40.1	34.6	32.8	34.5	32.0
Day-old chick (eurocents)	30.6	31.1	31.0	36.7	35.5	31.6	31.7	31.1	30.8
Live weight (g)	2,200	2,200	1,920	2,300	2,460	2,700	2,100	2,300	2,300
Feed conversion	1.67	1.68	1.75	1.75	1.85	1.95	1.65	1.76	1.80

Table 3.2	Costs of primary production in eurocents per kilogram of live weight in selected EU countries in 2011								
	NL	DE	FR	UK	IT	ES	DK	PL	HU
Total costs (incl. labour)	91.2	92.9	94.9	96.9	106.5	95.2	91.4	90.2	91.8
Total costs (excl. labour)	86.8	88.4	90.0	93.9	103.9	92.3	86.8	88.7	89.5
Day-old chicks	14.4	14.7	16.9	16.6	15.1	12.2	15.7	14.1	13.9
Feed	56.4	57.9	57.4	61.9	74.1	67.4	54.1	60.7	57.6
Other variable costs	8.6	8.6	8.2	7.4	7.5	5.8	9.3	7.2	8.9
Labour	4.4	4.5	4.9	3.1	2.6	2.9	4.6	1.4	2.3
Housing	5.4	5.8	6.5	7.0	6.2	5.9	6.5	5.9	8.0
General	1.1	1.1	1.1	1.1	1.0	0.9	1.1	0.8	0.8
Manure disposal	0.9	0.4	0.0	0.1-	-	-	0.0	0.1-	0.3

Prices

Table 3.1 gives the average price of feed and day-old chicks. The price of feed strongly influences the total production costs. Feed prices in the EU countries range from €32.0 per 100 kg in Hungary to €35.4 in the UK. The feed price in Italy falls out of the range with a price of €40.1 per 100 kg in 2011. For all countries the feed price is influenced by the world market prices of the main feed ingredients, such as grains (wheat and maize) and soybeans. The difference in feed price between the EU countries is a result of differences in structure of the supply chain (integrated versus non-integrated), average farm size, feed mill policy, average transport distance to farms and optimal position with access to sea harbours and water ways for efficient supply of feed ingredient. For the countries outside the Eurozone, the exchange rate is also relevant because the feed prices in Table 3.1 are calculated in euros. This is especially relevant for the countries that do not use euros: Poland, UK and Hungary.

Table 3.1 also gives the day-old chick prices in eurocents per chick. For all countries the price in 2011 was around 31 eurocents. Prices in the UK and Italy are higher compared to the other countries. Table 3.2 also indicates the costs of day-old chicks but these are expressed in costs per kg live weight. This means that besides the price of the day-old chick the average final live weight of the broilers also impacts the costs of day-old chicks per kg live weight.

Performance

Table 3.1 gives the main indicators of the zoo-technical results that are the average live weight (gram) and the feed conversion (kg feed used per kg live weight). The live weight in most countries is between 2 and 2.5 kg. Exceptions are France with a slightly lower live weight and Spain with a live weight of 2.7 kg. The feed conversion is a good indicator of the production efficiency. Feed conversion also differs between the EU countries. Table 3.1 shows that the farms in Netherlands, Germany and Denmark have low feed conversion rates. At first glance, Italy and Spain seem to have high feed conversion rates. However, it should be taken into account that feed conversion is correlated with live weight. Growing broilers to a higher final weight, as in Italy and Spain, results in a higher feed intake per kg growth.

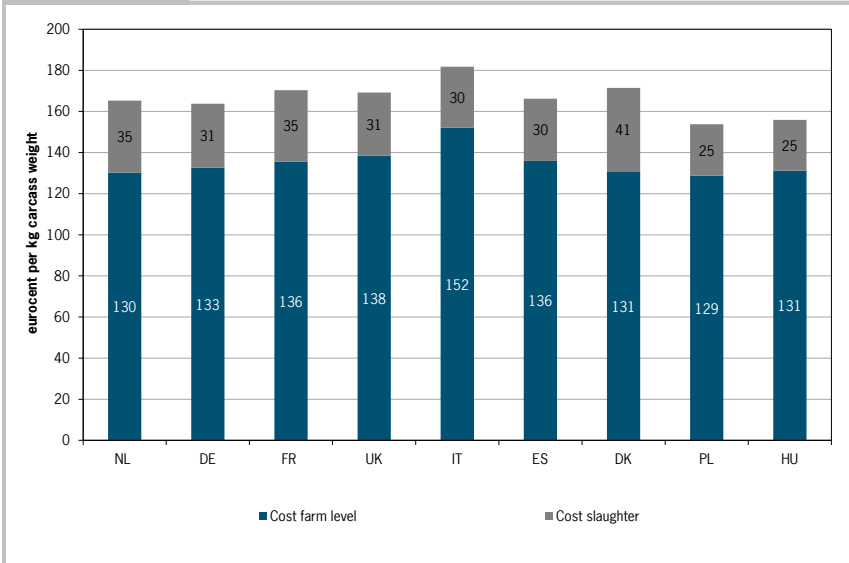
Table 3.2 shows that EU countries also differ in some other cost components. Other variable costs relate to costs of heating, electricity, litter, animal health and catching. These variable costs vary slightly between the countries mainly because of differences in heating costs (fuel prices) and costs of catching. Labour costs also differ between countries. Normally, the work on the farm is done by the farmer. This work is calculated in the production costs based on a regular payment (full-time equivalent) for similar work in the specific country. In the eastern and southern countries, the costs of labour are generally lower than they are in north-western Europe. The differences in housing costs (poultry house and inventory) between the countries relate to differences in investments for a poultry house, stocking density and interest rate. General costs relate to the costs at farm level for insurance, bookkeeping, consultancy, telephone, and transport. In some countries broiler farmers have manure disposal costs. In the Netherlands, Germany and Hungary farmers have to pay for a sustainable disposal of manure. In other countries, farmers do not have to pay for manure disposal, while in the UK and Poland farmers even get a small revenue.

3.1.2 Production costs after slaughter

The costs of slaughter are calculated based on the slaughter of broilers in a large commercial slaughter house. The final product is a broiler carcass. The weight of the carcass is 70% of the live weight of the broilers delivered from the farm. Basic assumption is that the costs of slaughter are 35 eurocents per kg of carcass weight in the Netherlands. The main components in the slaughter costs are labour (30%) and building and equipment (30%). The other costs (40%) are, for example, transport of broilers, energy, water, quality control and offal disposal. These costs vary from country to country. However, because all

slaughterhouses in the EU use advanced modern equipment, it is assumed that the differences in slaughter costs between the countries are mainly a result of differences in labour costs. Based on labour costs for slaughterhouse workers, the costs of slaughter are calculated for the selected EU countries. The hourly wages for workers in slaughterhouses, including social tax, are: in the Netherlands €21, in Germany €15, in France €20, in the UK €16, in Italy €13, in Spain €14, in Denmark €34, in Poland €5 and in Hungary €4 (Van Horne, 2013). Differences in labour costs also have an influence on the level of investment for buildings and the costs of bird transportation. Also differences in interest rate between the countries are taken into account and have an impact on the annual costs of building and equipment. Table 3.3 gives the final results of costs at farm level and the costs of slaughter in euro per kg carcass weight. Figure 3.2 gives the same data in a graph.

Table 3.3	Cost of primary production, cost of slaughter and total costs in eurocents per kg of carcass weight								
	NL	DE	FR	UK	IT	ES	DK	PL	HU
Costs farm level	130	133	136	138	152	136	131	129	131
Costs slaughter	35	31	35	31	30	30	41	25	25
Total	165	164	170	169	182	166	171	154	156

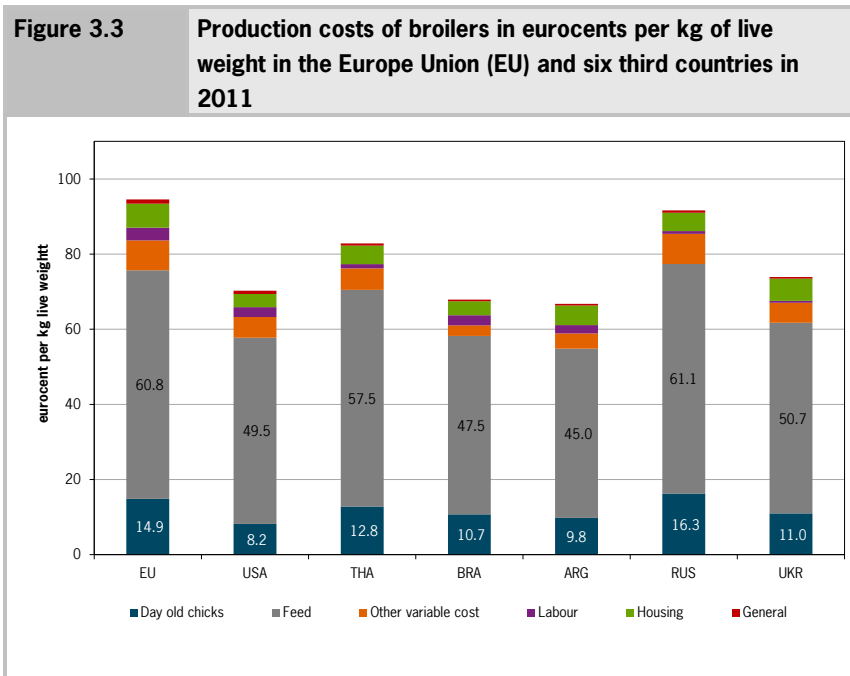
Figure 3.2**Costs of primary production and slaughter of broiler in eurocents per kilogram of carcass weight in 2011**

3.2 Production costs in some non-EU countries

The production costs of poultry meat was researched in six countries outside Europe: the United States of America, Thailand, Brazil, Argentina, Russia and Ukraine. Brazil and the United States are the main exporters to the world market. Brazil and Thailand are the main suppliers of (frozen) poultry meat to the EU. Argentina also exports poultry meat to the EU. Ukraine has been included in the above list because this country is close to Poland and Germany and has the potential of becoming an exporter to the EU. The data for the United States are based on information from the National Chicken Council (NCC). For Brazil, data are available from the research organisation Embrapa. For Thailand, Argentina, Russia and Ukraine, the information is based on several sources. Production costs for these countries are calculated in local currency and subsequently converted into euros. The average exchange rate for 2011 was used for the euro conversion (Appendix 1).

3.2.1 Production costs at primary farm

Figure 3.3 shows the total production costs for the EU as compared to the USA, Thailand, Brazil, Argentina, Russia and Ukraine. In the EU, the average total production costs were 94.6 eurocents per kg of live weight in 2011. In the USA, Brazil and Argentina, production costs are significantly lower than in the EU, respectively 70.3, 67.9 and 66.8 eurocents per kg of live weight. Ukraine and Thailand also have lower production costs compared to the EU: Ukraine 73.9 eurocents and Thailand 82.8 eurocents per kg of live weight. The total production costs in Russia are only slightly below the EU average. The basic assumptions for performance and prices are given in Table 3.4. The total costs and the build-up of the main items for all countries are shown in Table 3.5.



The feed price determines the total production costs to a significant extent. The feed price is considerably lower in Argentina, the USA and Brazil than it is in the EU. The lower feed price in these countries can largely be explained by the domestic availability of sizeable quantities of feed ingredients such as maize and soy bean. European producers partly depend on South American imports

for their feed ingredients. The costs of storage, transport and margins increases the price of feed ingredients in Europe. The price of day-old chicks is also lower because of the low feed price. Table 3.4 also shows the most important zoo-technical results for third countries. In the USA, Brazil, Argentina and Ukraine, the final weight of broilers is higher than it is in the EU. When the final weight is higher, then the feed conversion is also higher. Still, the feed conversion is relatively high in Argentina.

Table 3.4	Prices and technical performance for broiler production in EU and selected non-EU countries						
	EU	USA	THA	BRA	ARG	RUS	UKR
Feed price (€ /100 kg)	34.5	25.7	32.9	26.5	23.1	33.9	28.0
Day-old chick (eurocents)	32.2	19.6	28.0	27.0	24.0	32.3	26.0
Live weight (g)	2,276	2,500	2,300	2,625	2,600	2,100	2,480
Feed conversion	1.76	1.93	1.75	1.79	1.95	1.80	1.81

Table 3.5	Costs of primary production in EU and selected non-EU countries in eurocents per kg of live weight a)						
	EU	USA	THA	BRA	ARG	RUS	UKR
Total costs (incl. labour)	94.6	70.3	82.8	67.9	66.8	91.6	73.9
Total costs (excl. labour)	91.1	67.6	81.7	65.2	64.5	90.9	73.4
Day-old chicks	14.9	8.2	12.8	10.7	9.8	16.3	11.0
Feed	60.8	49.5	57.6	47.5	45.0	61.1	50.7
Other variable costs	7.9	5.5	5.7	2.8	4.1	8.0	5.3
Labour	3.4	2.7	1.2	2.7	2.2	0.7	0.5
Housing	6.4	3.5	4.9	3.7	5.2	4.9	5.9
General	1.0	0.9	0.6	0.5	0.6	0.6	0.5
Manure disposal	0.2	0.0	0.0	-0.1	-0.1	0.0	-0.1

a) Because of rounding-off, the total of the different items may not exactly equal the total costs.

In addition to the aforementioned differences in the feed price and purchase price of day-old chicks, third countries also have the advantage of lower housing and labour costs. The reason for the lower labour costs in Thailand, Brazil, Argentina, Ukraine and Russia are lower wages but also lower social security premiums. The difference in labour costs between Europe and the US is mainly attributable to the social security system, with higher employer charges being paid in Europe.

In all non-EU countries, broiler producers have no costs for the disposal of manure. Manure is disposed free-of-charge in the region. In Brazil, Argentina and Ukraine, the removal of dry poultry manure is a small source of income.

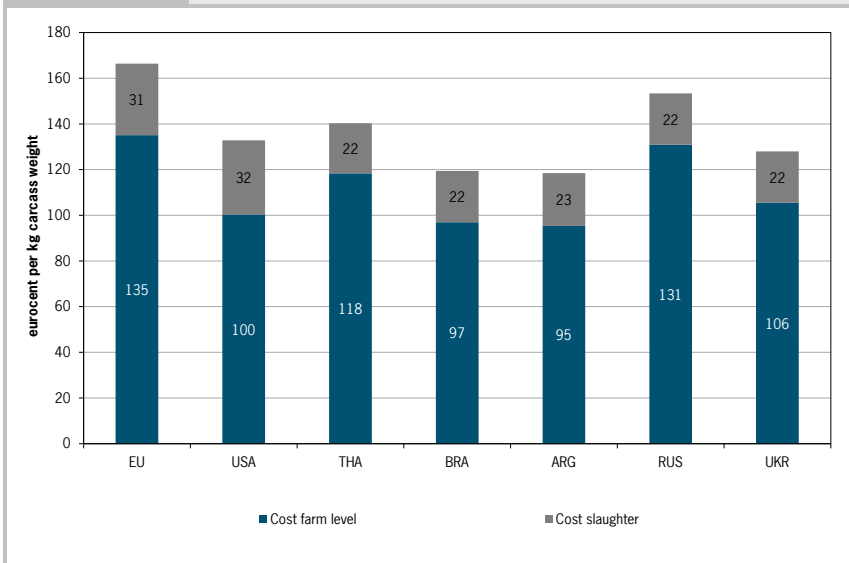
In Brazil, Argentina, Thailand and Ukraine producers have lower costs, because on many topics no legislation exists as in the EU. Examples are the use of antimicrobial growth promoters and meat-and-bone meal in broiler feed, and the absence of environmental legislation. Meat-and-bone meal is used in countries outside the EU, whereas it is explicitly forbidden in the EU. When meat-and-bone meal is used, the composition of the feed is adjusted and this leads to a lower feed price.

3.2.2 Production costs after slaughter

In addition to the costs of primary production, the costs of slaughter also play an important role in the international comparison of competitiveness. The costs of slaughter are calculated based on slaughter of broilers in a large commercial slaughterhouse. The weight of the carcass is 70% of the live weight delivered from the farm. The main components in the slaughter costs are labour (30%) and building and equipment (30%). The other costs (40%) are, for example, transport of broilers, energy, water, quality control and offal disposal. We assumed that all countries use advanced modern equipment. Based on labour costs for slaughterhouse workers, the costs of slaughter are calculated for the selected non-EU countries. Hourly wages for workers in slaughterhouses, including social tax, in some countries are: the USA €17, Thailand €2, Brazil €3, Argentina €3.5, Russia €3 and Ukraine €2.5. Table 3.6 gives the results of costs at farm level and the costs of slaughter in eurocents per kg of carcass weight. Figure 3.4 gives the same data in a graph.

	Costs of primary production, costs of slaughter and total costs in eurocents per kg of carcass weight						
	EU	USA	THA	BRA	ARG	RUS	UKR
Costs farm level	135	100	118	97	95	131	106
Costs slaughter	31	32	22	22	23	22	22
Total	166	133	140	119	118	153	128

Figure 3.4 Costs of primary production and slaughter of broilers in eurocents per kg of slaughter weight in the European Union and six third countries in 2011



In the EU, the average production costs after slaughter are 166 eurocents per kg of carcass weight. Brazil and Argentina have very low costs with 118 to 119 eurocents per kg of carcass weight. In Ukraine, the total costs are 128 eurocents, followed by US with 132 eurocents and Thailand with 140 eurocents per kg of carcass weight. The difference in production costs between the EU and some third countries is increasing because the latter have lower slaughtering costs. This is particularly true in the case of Thailand and Russia. In 2011, the production costs after slaughter in the low-cost countries, Brazil and Argentina, were 28% lower than the EU average.

4 Import and export of poultry meat

4.1 Imports of breast fillet

The EU is a large importer of poultry meat, mainly from Brazil (66%) and Thailand (23%). These two countries account for almost 90% of the total EU import of poultry meat. Table 4.1 gives the amount imported from 2007-2012 from the most important third countries. The total import of poultry meat in 2012 was 0.844m tonnes. The total value of the EU poultry meat imports in 2012 was €2.202bn. The average value in 2012 was €260 per 100 kg of imported poultry meat.

Table 4.1	EU Import of poultry meat (in 1,000 tonnes) from third countries					
	2007	2008	2009	2010	2011	2012
Brazil	672	679	659	587	605	561
Thailand	129	147	142	148	154	196
Chile	17	35	39	34	44	42
Argentina	26	20	21	16	16	14
China	0	0	6	10	14	16
Other	14	10	9	12	12	15
Total	858	891	876	807	845	844

Source: European Commission, February 2013.

Table 4.2 gives more detailed information on the different poultry meat products imported by the EU. Table 4.2 shows the main imports (more than 50,000 tonnes imported) and their amounts in 2011 and 2012.

gn code	Product	2011	2012
16023219	cooked, prepared, meat or meat offal >=57%	248	237
02109939	meat, salted, dried or smoked	207	210
02071410	frozen boneless cuts	107	104
16023230	prepared, meat or meat offal >=25% but <=57%	91	86
16023111	preparations of turkey	66	76

Source: AVEC annual report, October 2013.

Three products are imported in quantities over 100,000 tonnes: frozen boneless cuts (frozen natural breast fillet, code 02071410), salted meat (salted breast fillet, code 02109939) and cooked/prepared meat (cooked breast fillet, code 16023219). The import development of these three products from 2000 to 2012 is shown in Figure 4.1.

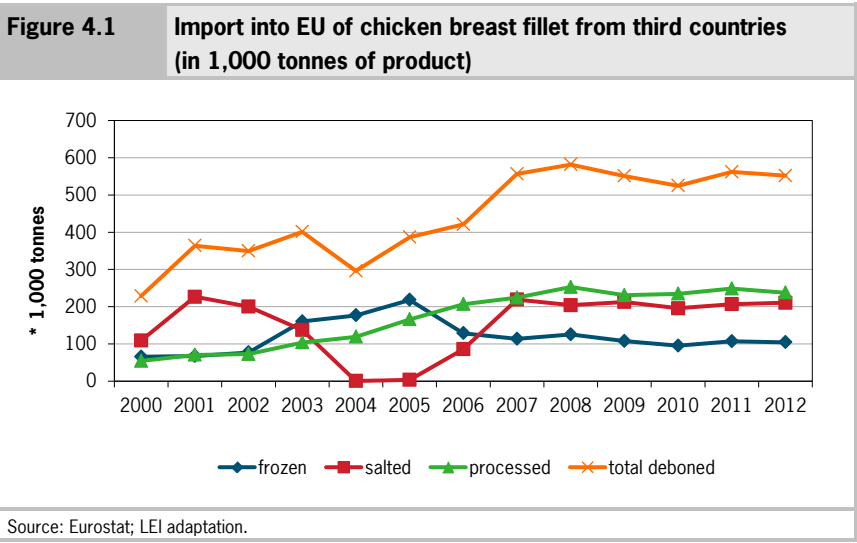


Figure 4.1 shows that total EU-imports of chicken breast fillet from third countries have stabilised in the past few years. Total imports have amounted to 500,000 to 600,000 tonnes since 2007. In 2012, the EU imported 104,000 tonnes of natural chicken breast fillet (frozen). The imported amount of salted chicken breast fillet in 2012 was 210,000 tonnes and the amount cooked fillet was 237,000 tonnes. The imported quantities in each category have been sta-

ble over the past five years. This means that the quotas and import levies limit imports from third countries. Table 4.3 gives an overview of the quota and import levies for some poultry meat products. A more comprehensive overview is given in Appendix 2.

Table 4.3		Overview of quotas and import levies for some poultry meat products			
	poultry meat	poultry meat	poultry meat	poultry meat	turkey meat
	salted	preparati- ons	naturel	preparati- ons	preparati- ons
	0210.9939	1602.3219	0207.1410/ 50/70	1602.3230	1602.31xx
ad valorem levy (%)	15.4	8		10.9	8.5
import levy (€/tonne)	1300	1024	1024		1024
quota (tonnes):					
Brazil	170,807	79,477	11,932	62,905	92,300
Thailand	92,610	160,033	5,100	14,000	0
Other	828	11,443	3,300	2,800	11,596
Total	264,245	250,953	20,332	79,705	103,896

Salted breast fillet

The EU sets quotas to maximize the total amount of imported salted breast fillet. The maximum amount for all third countries is 264,245 tonnes, of which 170,807 tonnes for Brazil, 92,610 tonnes for Thailand and 828 tonnes for other third countries. Within these quotas, the import levy is 15.4% of the value. At this import levy, the offer price of salted breast fillet from third countries is far below the EU offer price. Table 4.2 shows that the total amount of salted breast fillet (code 02109939) imported in 2011 was 207,000 tonnes and in 2012 it was 210,000 tonnes. This is approximately 20% below the maximum quota. However, the actual situation is different per country. Brazil is exporting the maximum volume within the quota and is also exporting salted breast fillet outside of the quota (approximately 20,000 tonnes in 2012). Thailand is exporting only a part of the maximum because it was not allowed to export salted breast fillet, due to problems with Avian Influenza. Thailand did focus on the export of cooked breast fillet for many years.

Cooked breast fillet

The EU sets quotas to maximise the total imported amount of cooked breast fillet. The maximum amount for Brazil is 79,477 tonnes, for Thailand 160,033 tonnes and for the other countries 11,443 tonnes. The total amount for all third countries is 250,953 tonnes. Within these quotas, the import levy is 8% of the value. At this import levy the offer price of cooked breast fillet from third countries is far below the EU offer price. That is why the quota is fully used. Table 4.2 shows that the total imported amount of cooked breast fillet (code 16023219) was 248,000 tonnes in 2011 and 237,000 tonnes in 2012. This is almost the maximum total amount. Outside the quota the import levy on cooked breast fillet is €1.02 per kg. Thailand is also exporting cooked breast fillet out of quota.

Natural breast fillet

Natural breast fillet has just a limited quota of around 20,000 tonnes. The import levy is €1.02 per kg. Depending on the offer price, a varying additional import levy may be charged. In recent years this has varied from €0.30 to 0.40 per kg. Even with these import levies, third countries can offer natural breast fillet at more competitive prices than the EU industry. Table 4.2 shows that the amount imported of frozen natural breast fillet (code 2071410) was 107,000 tonnes in 2011 and 104,000 tonnes in 2012.

Other products of poultry

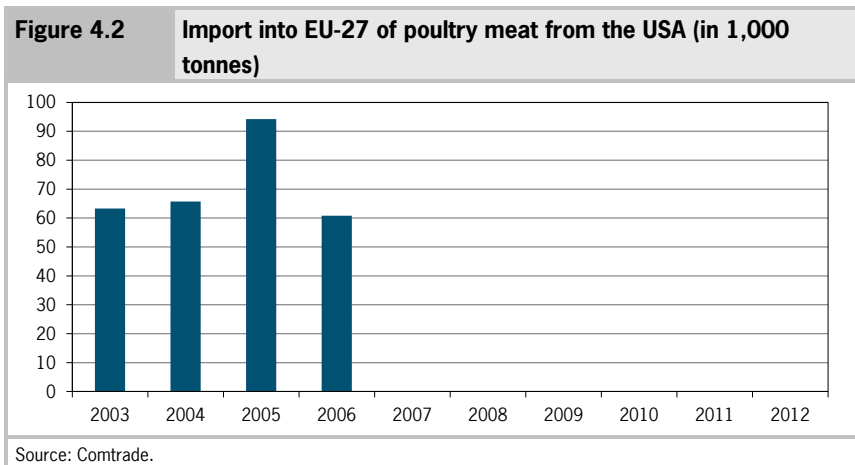
In addition to breast fillet, other products of poultry meat are also imported into the EU. The main product is prepared meat (prepared, meat or meat offal $\geq 25\%$ but $\leq 57\%$, code 16023230), and in 2012 86,000 tonnes were imported. The quotas are set on 79,705 tonnes. Within the quotas the import levy is 10.9%.

Turkey meat

Although broiler is the main type of imported poultry meat, meat from other poultry species is also imported from third countries. For turkey meat preparations the maximum amount is 103,896 tonnes. Within these quotas the import levy is 8.5% In 2012, 76,000 tonnes of turkey meat (16023111, preparations of turkey) were imported. Outside the quota the import levy is €1.02 per kg. Depending on the offer price, an additional import levy may be charged.

4.2 Imports of leg meat

The EU imports only small amounts of leg meat. In 2012, the EU-27 imported 8,403 tonnes of leg meat (code 02071460) from third countries. In the world market, the USA is an important exporter of leg meat to Russia and countries in Asia and Africa. The USA used to export leg meat to countries in Eastern Europe, especially Rumania and Bulgaria, before these countries joined the EU in 2007. Figure 4.2 shows the development of EU-27 imports from the USA between 2003 and 2012. This graph illustrates that from 2007, EU imports from the USA stopped due to a ban on decontaminated poultry meat and EU import levies introduced by the new member states after joining the EU. At the same time, the graph illustrates the USA's competitiveness to export leg meat to Eastern European countries that have no or low import levies.



4.3 Exports

EU countries export poultry meat to several third countries in the Middle East, Africa and Asia. In 2012, the EU mainly exported to Saudi Arabia, Hong Kong, Benin, Russia and Ukraine with each country importing more than 100,000 tonnes from the EU. Table 4.4 gives the amount exported to the most important third countries from 2007 to 2012. The total EU export of poultry meat in 2012 was 1.430m tonnes with a total value of €2.064bn. The average value in 2012 was €144 per 100 kg of exported poultry meat, in contrast to the average val-

ue of €260 per 100 kg for the EU imports. In general, the EU exports to third countries are lower value cuts of meat such as wings, feet and offal (AgraCeas, 2012). These cuts are less popular on the EU market. This export is a necessary outlet for the valuation of the whole bird (Mulder, 2011). An example of low value export is GN code 02071470 (frozen cuts with bone in) with an average value in 2012 of €76 per 100 kg. Another export to third countries are specialised products such as whole birds from France to Saudi Arabia. In 2012, almost 300,000 tonnes were exported within GN code 02071290 ('65% chickens') with an average value of €130 per 100 kg (AVEC, 2013). In 2012, this export was supported by export refunds.

Table 4.4	EU Export of poultry meat (in 1,000 tonnes)					
	2007	2008	2009	2010	2011	2012
Saudi Arabia	79	95	97	118	151	149
Hong Kong	65	59	89	151	188	125
Benin	64	83	85	115	126	140
Russia	244	230	228	245	115	114
Ukraine	28	112	89	86	82	103
Ghana	29	31	29	41	69	69
Other	358	372	398	508	681	730
Total	867	982	1,015	1,264	1,412	1,430

Source: European Commission, February 2013.

5 Results of different scenarios

5.1 Description of the scenarios

Three scenarios for the future were developed to show how a change in import levies and a change in the exchange rate may impact the competitiveness of the EU poultry meat sector:

1. a change in the EU import levy on poultry meat, as a possible result of a new multilateral (WTO) agreement or bilateral agreements; in this scenario, the basic import levy is reduced by 50%, plus the additional levy is removed, as an example to illustrate the impact;
2. a change in exchange rates of the US dollar, Thai baht, Brazilian real, Argentine peso and Ukrainian hryvnia. In this scenario, a 10% lower exchange rate is assumed for the currencies of the non-EU-countries. The average exchange rate in 2011 was used to convert the production costs of all countries into euros. Appendix 1 shows the development of the exchange rate in some non-EU countries. The graph in Appendix 1 illustrates that a 10% lower exchange rate is a realistic scenario for some countries;
3. a combination of a lower import levy (scenario 1) and a lower exchange rate of third country currencies (scenario 2). This is the 'worst case' scenario.

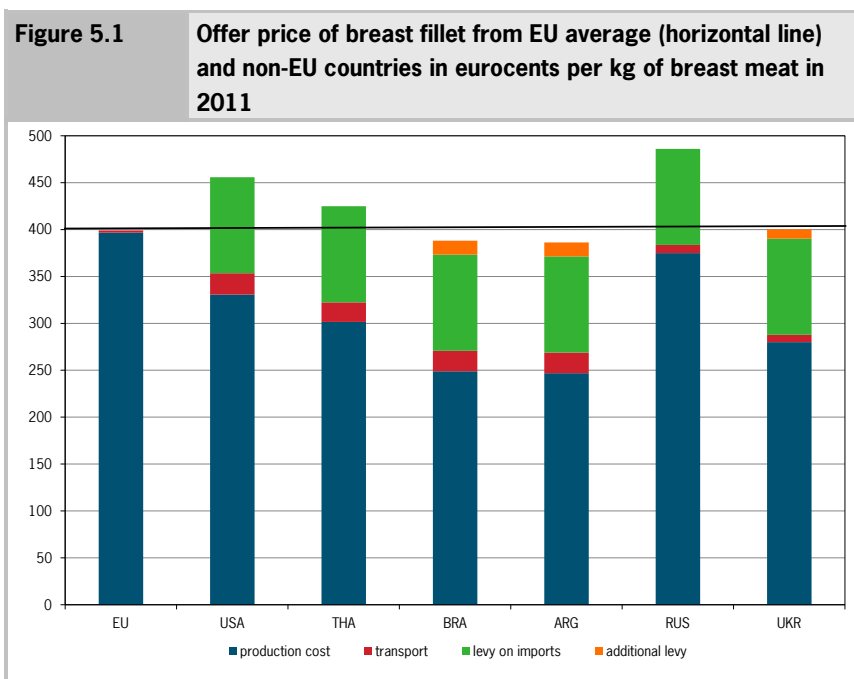
In this chapter these three scenarios have been examined for breast fillet. In all figures, the EU level is an average of the nine EU countries shown in chapter 3.

5.2 Production costs of breast fillet

Based on the calculation of the production costs at farm level and in the slaughterhouse (see chapter 3), the production costs of breast fillet was calculated for all countries. After slaughter the bird's carcass has to be cut into different parts: breast cap, leg quarter, wings and rest of the carcass. In the next processing step, the breast cap will be deboned, and breast meat will be the final product. Breast meat is the product with the highest value on the European market and therefore it is the most interesting product to be exported to the EU. To calculate the production cost of breast meat for all countries, we added the following costs to the production after slaughter: the costs of cutting up the

breast cap and the costs of deboning it. For EU countries, the disposal costs for offal also have to be added, and the revenues have to be subtracted from the total costs. Revenues come from the sale of the legs/leg quarters, the wings and the rest of the carcass. For the non-EU countries, revenue will also come from the offal. The result of the calculation will be the net production costs of a kg of breast meat at the processing plant in the production country.

To compare the offer price on the EU market, we also added the additional costs of transport for all countries. Transport costs include local transport to the harbour, sea freight in a container, handling costs in the harbour, and transport from a European harbour to the final location within Europe. Frankfurt am Main in Germany is set as a reference to calculate the transport costs. The import levies were also added to these costs. Figure 5.1 gives an overview of all costs components to compare the offer price of the selected non-EU countries to the EU average.

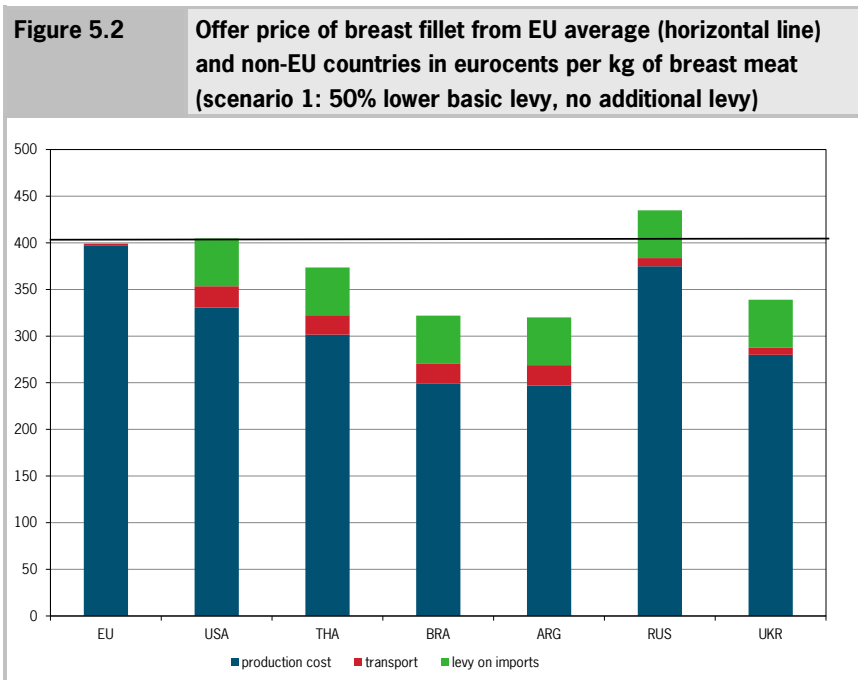


In 2011, the offer prices of Brazil and Argentina are already lower than the EU average offer price of breast fillet. Figure 5.1 illustrates that the import levies protect the EU countries from large imports of breast meat from third coun-

tries. The additional levy is an extra import tax that may be applied in case of a serious market disorder.

5.3 Scenario 1 - Lower EU import levy

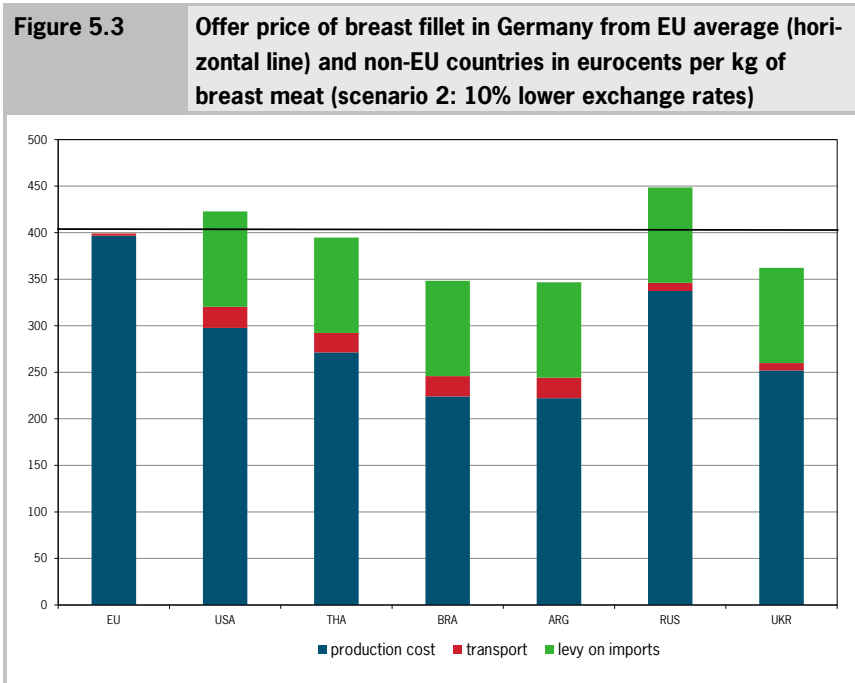
In scenario 1, the impact of a 50% lower basic import levy and no additional levy on imports into the EU have been examined.



As Figure 5.2 illustrates, in this scenario Brazil and Argentina would be the most competitive suppliers of breast fillet to Frankfurt in 2011. Ukraine and Thailand would also have a lower offer price than the EU countries do. If the EU lowers its import levies, then the USA could almost compete on the EU market; only Russia still could not.

5.4 Scenario 2 - Change in exchange rates

Scenario 2 evaluates the consequences of 10% lower currency exchange rates of all non-EU countries.



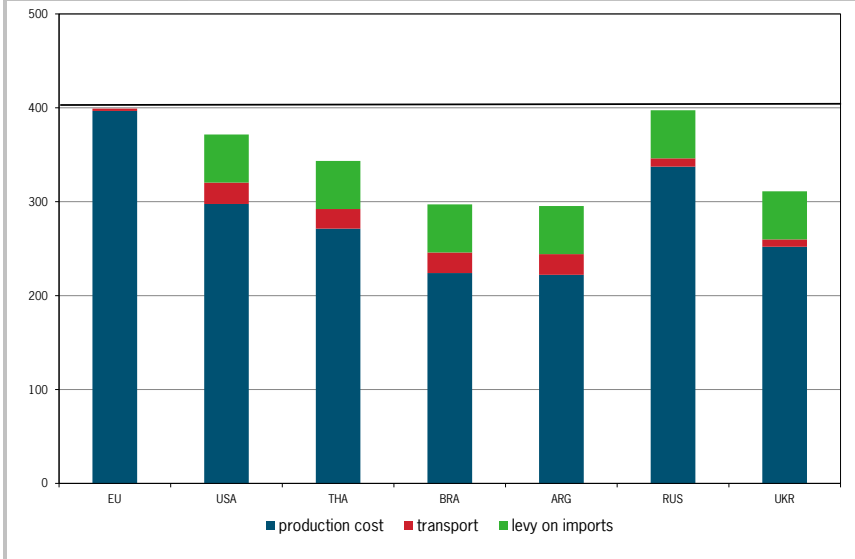
Lower exchange rates have less impact than the lower import levies of scenario 1. However, Figure 5.3 shows that even in the case of only 10% lower exchange rates, besides Brazil and Argentina, also Ukraine and Thailand have a lower offer price for breast fillet than the EU average price.

5.5 Scenario 3 - Combination

Scenario 3 is a combination of the scenarios 1 and 2: lower import levy (scenario 1) and also 10% lower exchange rates of all non-EU currencies (scenario 2). In fact, this scenario 3 is a 'worst-case scenario'.

Figure 5.4

Offer price of breast fillet in Germany from EU average (horizontal line) and non-EU countries in eurocents per kg of breast meat (scenario 3: lower import levy and 10% lower exchange rate)



The combined consequences of lower import levies and 10% lower exchange rates are indicated in Figure 5.4. In this worst-case scenario, all third countries (except for Russia) obtain a competitive to strongly competitive position on the EU market for breast fillet.

Imported poultry meat from third countries is brought in frozen condition, so it cannot be used for the fresh-food market. However, Ukraine could have a different position. The distance to some EU countries is so close that export of fresh poultry meat could be an option.

6 Conclusions

Structure and employment

In 2012, the total poultry meat production in the EU-27 was 12.9m tonnes. The main poultry meat was broiler meat (76% of the total poultry meat production), followed by turkey meat and duck meat. The total number of farms with poultry in the EU-27 in 2010 was 2.2m. Of these farms, 19,680 can be described as professional because they have more than 5,000 birds. In the poultry meat supply chain, different companies are involved in supplies (e.g. hatcheries, feed mills) and slaughter/processing. The supply chain needs approximately 23 full-time workers for the production of 1,000 tonnes of poultry meat. The total employment in the EU poultry meat industry is estimated to be 303,000 employees and 5 to 10% of the market in the EU-27 is 'alternative broilers' (organic, free range and intermediate broilers).

Economic importance of the poultry meat sector

The total production value of the poultry meat sector in the EU-27 in 2012 was €32bn. This is the total value of the production at the primary farms, the slaughterhouses and the further processing of the poultry meat. The EU is an important player in the international trade of poultry meat. In 2012, the EU-27 exported 1.430m tonnes of poultry meat with a value of €2.064bn (average value €144 per 100 kg). At the same time, the EU-27 imported 0.844m tonnes with a value of €2.202bn (average value €261 per kg).

EU legislation

In the EU, poultry meat producers have to comply with European legislation. The additional costs of EU legislation are estimated to be 4.8 eurocents per kg of live weight (5.1% of the total production costs in 2011). These costs relate directly to EU legislation on environmental protection (Nitrate directive and reduction of ammonia emissions), food safety (Salmonella control, ban on the use of meat-and-bone meal, antibiotic growth promoters and GMO crops as feed ingredients) and animal welfare (minimum standards on space allowance).

Third countries

In general, many non-EU countries have very little to no legislation on environmental protection and animal welfare. Some countries, especially the USA, do have legislation on food safety. The main poultry meat exporting countries - ex-

cluding the USA - are Brazil, Thailand and Argentina. These countries have no environmental or animal welfare legislation. However, the stocking density in these countries is relatively low (30 to 40 kg per m²), due to high temperatures and low housing costs. These third countries have no legislation in the following areas: the use of GMO feed ingredients, use of meat-and-bone meal in poultry feed, the use of growth promoters, and the control of ammonia emissions from poultry houses and during manure application.

Production costs within the EU

The production costs of broiler meat have been calculated for the Netherlands, Germany, France, United Kingdom, Italy, Spain, Italy, Denmark, Poland and Hungary. The production cost in 2011 at farm level in these countries was, on average, 94.6 eurocents per kg of live weight. After slaughter, the production costs for these countries ranged from 154 to 182 eurocents with an average of 166 eurocents per kg of carcass weight.

Production costs in non-EU countries

The production costs of broiler meat were calculated for the following third countries: the United States, Thailand, Brazil, Argentina, Russia and Ukraine. For most of these countries, the production costs after slaughter are significantly lower than they are in the EU countries. Compared to the average level within the EU, the production costs per kg of carcass weight in 2011 was lower in Argentina (71%), Brazil (72%), Ukraine (77%), USA (80%), Thailand (84%) and Russia (92%). In the USA, Brazil and Argentina, the feed prices are low, due to the domestic availability of large quantities of feed ingredients. Most third countries also have the advantages of lower housing and labour costs (lower wages and low taxes and social security contributions), and a lack of legislation governing poultry meat production.

Imports breast fillet third countries

The EU is a large importer of poultry meat. Imports of breast fillet mainly come from Brazil and Thailand. Salted breast fillet is imported (in 2012 210,000 tonnes) within quota at an import levy of 15.4%. Cooked breast fillet is imported (in 2012 237,000 tonnes) within quota at an import levy of 8%. Natural breast fillet has a small quota and imports occur outside the quota. Outside the quota an import levy of €1.02 per kg has to be paid, and in recent years, an additional import levy (safe guard) of €0.10 to 0.30 per kg has also been charged. Despite these high import levies, the imports are competitive, and in 2012,

104,000 tonnes of natural breast fillet was imported. After the introduction of import quota in 2007, the total imports of poultry meat have not increased.

Imports leg meat third countries

The EU imports only small amounts of leg meat. In the world market, the USA is an important exporter of leg meat. The USA used to export leg meat to countries in Eastern Europe, especially Rumania and Bulgaria, before these countries joined the EU in 2007. Before 2007, the imports from the USA varied between 60,000 to 90,000 tonnes per year. This illustrates the competitiveness of the USA to export leg meat to countries in Eastern Europe that have low or no import levies. In any free trade agreement of the EU with the USA a trade flow of legs or leg quarters from the USA towards some eastern European countries can be expected.

Basis situation on import of breast fillet

Based on the calculation of the production costs at farm level and in the slaughterhouse, the production costs of breast fillet were calculated for the EU and non-EU countries. The costs of cutting up and deboning have to be included and the revenues for the other parts have to be subtracted. After the transportation costs and the full import levy (including the additional levy) were added, the results show that Argentina and Brazil can compete with the offer price of the EU poultry meat industry.

Scenarios

Some scenarios for the future have been developed to show how a possible change in import levies and a change in the exchange rate could impact the competitiveness of the EU poultry meat. In the first scenario, a 50% lower basic import levy and no additional levy on poultry meat was used to illustrate the impact of any multi- or bilateral agreement with lower import levies. The results show that in this scenario Argentina, Brazil, Ukraine and Thailand have a lower offer price of breast fillet than the EU poultry meat industry does. In the scenario with a 10% lower exchange rate, Argentina, Brazil, Ukraine and Thailand have a lower offer price offer price to the EU industry. For the worst case scenario, with a combination of lower import levies and a 10% lower exchange rate, all third countries in this research have a lower offer price of breast fillet than the EU industry does.

SWOT analysis

In a SWOT model, the strengths, weaknesses, opportunities and threats for the EU poultry meat sector were defined. The SWOT analysis gives an overview of the current situation and can be seen as a summary of the study. In Table 6.1, the most important SWOT components are mentioned for the EU poultry meat industry. The components of the SWOT analysis are based on this research, other LEI reports (Van Horne, 2013) and the research of the Rabobank (Mulder, 2011).

Table 6.1 SWOT model of the EU poultry meat sector

<p>Strengths</p> <ul style="list-style-type: none"> - After new member states joined the EU, a large internal market with a more balanced market with demand of both white and dark meat. - Strong focus on fresh poultry segment of the market. The importance of fresh meat will grow further because third countries cannot compete in this market segment. - In some countries the industry has grown in recent years and is working with modern poultry farms and processing plants, giving these companies a competitive position in the market. 	<p>Weaknesses</p> <ul style="list-style-type: none"> - High costs on poultry farms and in industry, partly as a result of EU and national legislation. - In many countries small and fragmented industry is operating with only a regional or national focus. - Part of the industry has a suboptimal supply chain with a medium to low efficiency. - Many regions have limited space for further development and growth of farms. Environmental restrictions and lack of local permits limit modernisation and expansion.
<p>Opportunities</p> <ul style="list-style-type: none"> - Increase of poultry meat consumption in the EU. In many countries consumption is growing and is expected to grow further (poultry meat: good health perception, low price, convenient product). - Growing demand for alternative poultry meat especially in north-western Europe. New market opportunities in market segment of animal welfare products (e.g., Better Life, freedom food, free range). - Further product development: added-value and further processed poultry meat products meeting the needs of the retail and food service sector. - Optimal supply chain management: improving efficiency and scale in the supply chain. - Consolidation: Further consolidation and internationalisation of the EU industry can increase the industry's competitiveness. - Further improve the image of poultry meat as a healthy, convenient product with a low carbon footprint compared to other animal protein sources. 	<p>Threats</p> <ul style="list-style-type: none"> - Free trade agreement with third countries including reduction of import levies and larger quota. - Stronger euro: A strong euro will make third countries more competitive on the EU market. - Import of fresh poultry meat from neighbouring third countries in Eastern Europe (e.g., Ukraine). - Animal disease pressure: risk of poultry diseases in high density poultry areas with a high impact on animal health and public health (e.g., avian influenza) - Feed ingredients: high prices and volatility in prices of grain and oilseed. - Regulations: more national and EU legislation (e.g., origin labelling and animal welfare) - Growing concern in society on sustainability and animal welfare issues. Industry has to keep their license to produce.

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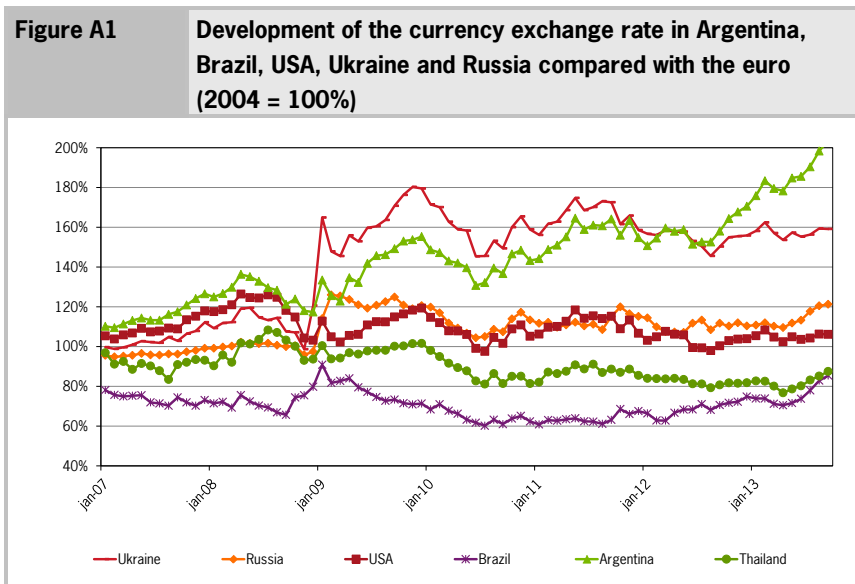
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Appendix 1

Development of the currency exchange rate in Argentina, Brazil, USA, Ukraine and Russia compared with the euro (2004 = 100%)



The exchange rate development of the Brazilian real is especially relevant. Between 2011 (the base year of this study) and 2012, the exchange rate of the Brazilian real increased compared to the euro. This means a higher exchange rate of the Brazilian real, resulting in a lower offer price of Brazilian poultry meat in Europe. As stated in Chapter 5, a 10% change in exchange rate (scenario 1) is a realistic scenario. Especially for Brazil, and also for Argentina, the value development of the local currency to the euro between 2011 and 2012/2013 was similar to this scenario.

The following average exchange rate to the euro was used to calculate production costs for 2011 (see chapter 4; local currency in euro):

Ukraine	0.090	Brazil	0.430
Russia	2.442	Argentina	0.174
USA	0.714	Thailand	0.023

Appendix 2

Overview of EU import levies and quotas

Third country	Code group	CN code 6-digit	poultry species	Quantity	Reduction levy rate €/tonne		Initial duty amount €/tonne	
					Lowest	Highest	Lowest	Highest
Turkey	90,244	0207 25 / 27	turkeys	1,000	93	339	187	679
Israel	94,092	0207 25 / 27	turkeys	4,000	100%		187	679
Israel	94,091	020732 / 33 / 35 / 36	geese and ducks	560	100%		free	1,232
Israel	91,372	160231	turkeys	5,000	100%		1,024	
Israel	91,373	160232	poultry	2,000	100%		1,024	
Chili	91,923	ex 0207 - ex 1602	poultrymeat (preparations)	14,500	100%			
GATT Brazil	94,410	0207 14 (10/50/70)	gallus gallus	11,932	100%		602	1,024
GATT Thailand	94,411	0207 14 (10/50/70)	gallus gallus	5,100	100%		602	1,024
GATT others	94,412	0207 14 (10/50/70)	gallus gallus	3,300	100%		602	1,024
GATT Brazil	94,420	0207 14 (10/50/70)	turkeys	4,300	100%		410	851
GATT others	94,421	0207 14 (10/50/70)	turkeys	700	100%		410	851

GATT erga omnes	94,422	0207 14 (10/50/70)	turkeys	2,485	100%	410	851
GATT	94,067	0207 11 / 12	gallus gallus, carcass	6,249	131	162	325
GATT	94,068	0207 13 / 14	gallus gallus cuts	8,570	93	512	1,024
GATT	94,069	0207 14 (10)	gallus gallus frozen boneles	2,705	795	1,024	
GATT	94,070	0207 24 / 25 / 26 / 27	turkeys	1,781	93	425	851
USA	94,169	0207 11 / 12 / 13 / 14 / 24 / 25 / 26 / 27 / 28		21,345	50%	100%	1,024
panel salted:							
Brazil	94,211	ex 0210 99 39	salted poultrymeat	170,807	levy	15.40%	1,300
Brazil	94,214	16023219	preparations gallus gallus	79,477	levy	8%	1,024
Brazil	94,251	16023211	preparations gallus gallus	15,800	levy		630
Brazil	94,252	16023230	preparations gallus gallus	62,905	levy	10.90%	
Brazil	94,253	16023290	preparations gallus gallus	295	levy	10.90%	
Brazil	94,217	160231xx	preparations turkey	92,300	levy	8.50%	1,024
Thailand	94,212	ex 0210 99 39	salted poultrymeat	92,610	levy	15.40%	1,300
Thailand	94,215	16023219	preparations gallus gallus	160,033	levy	8%	1,024
Thailand	94,254	16023230	preparations gallus gallus	14,000	levy	10.90%	
Thailand	94,255	16023290	preparations gallus gallus	2,100	levy	10.90%	
Thailand	94,256	16023921	preparations gallus gallus	10	levy		630
Thailand	94,257	16023929	preparations gallus gallus	13,500	levy	10.90%	

Thailand	94,258	16023940	preparations gallus gallus	600	levy	10.90%	
Thailand	94,259	16023980	preparations gallus gallus	600	levy	10.90%	
Other	94,213	ex 0210 99 39	salted poultrymeat	828	levy	15.40%	1,300
Other	94,216	16023219	preparations gallus gallus	11,443	levy	8%	1,024
Other	94,260	16023230	preparations gallus gallus	2,800	levy	10.90%	
Other	94,261	16023211	preparations gallus gallus	340	levy		630
Other	94,262	16023290	preparations gallus gallus	470	levy	10.90%	
Other	94,263	16023929	preparations gallus gallus	220	levy	10.90%	
Other	94,264	16023940	preparations gallus gallus	148	levy	10.90%	
Other	94,265	16023980	preparations gallus gallus	125	levy	10.90%	
Other	94,218	160231xx	preparations turkey	11,596	levy	8.50%	1,024
PERU (2013)		annual increase +10%		7,500		100%	
TOTAL EU IMPORT QUOTA				836,034			

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