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## **Factors Influencing U.S. Poultry Exports**

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### **Abstract**

We investigate major factors behind U.S. poultry exports. While many economic variables such as exchange rate and foreign consumer income and animal disease such as avian influenza affect U.S. poultry exports, trade barriers of various kinds tend to impact U.S. poultry exports more significantly. The major trade barriers facing U.S. poultry exports include EU technical trade barrier, Indian protectionism using avian influenza as a guise, various anti-dumping cases, Russian ban in retaliation to U.S. economic sanctions, and religious trade barriers encountered in some Muslim countries.

**Keywords:** U.S. poultry exports, trade barriers

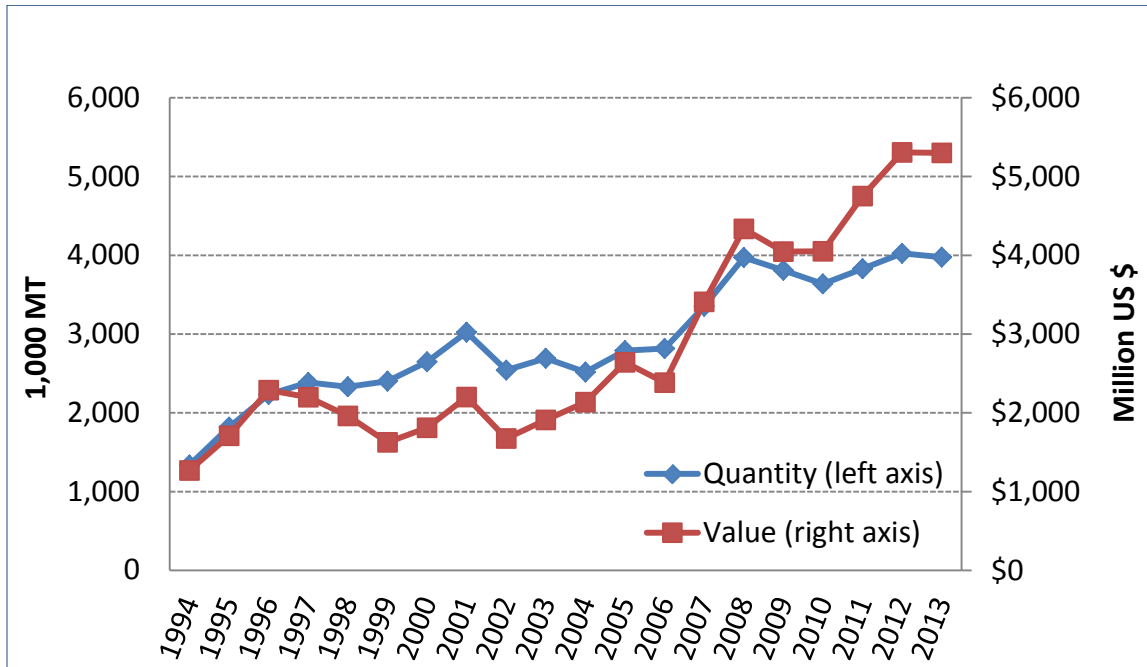
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## Introduction

Over the past two decades, U.S. poultry exports have grown significantly. From 1994 through 2013, U.S. poultry exports increased at an average annual rate of 5.4 percent, from 1.523 million metric tons to 4.105 million metric tons (Figure 1). During this period, broiler exports grew at an annual rate of 5.5 percent, from 1.307 million metric tons to 3.632 million metric tons, while turkey exports increased from 127,187 metric tons in 1994 to 344,346 metric tons in 2013, an average annual growth rate of 5.4 percent.



**Figure 1.** U.S. Poultry Exports in 1994 -2013

**Source.** USDA Foreign Agricultural Service's Global Agricultural Trade System

During this same period, U.S. broiler production increased at an average annual rate of 2.4 percent, from 10.735 million metric tons in 1994 to 16.976 million tons in 2013, and turkey production grew from 2.239 million tons to 2.623 million tons in 2013, an average annual growth rate of 0.8 percent. As poultry exports have grown at a faster pace than production, the percentage of U.S. poultry production that is exported has risen. For broilers, export share of production (by ready-to-cook weight) increased from 11.8 percent in 1994 to 20.8 percent in 2013, and for turkey the share of production exported rose from 5.7 percent to 13.1 percent.

The importance of exports as a driver of U.S. poultry production is evident, given the fact that, after many years of increase, U.S. poultry consumption has leveled off. Per capita chicken consumption in the U.S. in the past decade ending in 2013 averaged 44.0 kilograms, with a standard deviation of 1.2 kilograms, while U.S. per capita consumption of turkey averaged 7.6 kilograms, with a standard deviation of 0.3 kilograms. As shown in Table 1, the increases in broiler and turkey production from 1994 to 2013 are largely attributable to increased exports.

We expect that exports will account for an increasing share of U.S. chicken and turkey production well into the future.

**Table 1.** U.S. Broiler and Turkey Production, Consumption and Exports (in 1,000 MT)

Years	Broiler			Turkey		
	Increase in Production	Increase in Consumption	Increase in Exports	Increase in Production	Increase in Consumption	Increase in Exports
1984-1993	4,082	3,380	706	958	853	99
1994-2003	3,961	3,164	928	290	191	92
2004-2013	1,690	599	1,170	182	21	137

**Source.** USDA Foreign Agricultural Service's Global Agricultural Trade System and PSD database

So far, very few studies in the existing literature have looked at this issue, which is of critical importance for the U.S. poultry industry. The objective of this paper is to examine the major factors behind U.S. poultry exports.

While many economic variables such as currency exchange rates, consumer incomes in importing countries, and foreign poultry production, etc., affect U.S. poultry exports, it is trade barriers that tend to have a more obvious and significant impact. In the 1990s, the primary function of the USA Poultry & Egg Export Council (USAPEEC) was promoting U.S. poultry around the world. Today, although USAPEEC remains a promotional organization, its focus has expanded to include addressing unfair trade restrictions against U.S. poultry around the world. While many of these trade barriers are protectionist in nature, we see a growing number that target U.S. poultry in response to U.S. government policies. The major factors affecting U.S. poultry exports include, but are not limited to, the following:

### **Technical Trade Barrier Used by EU against U.S. Poultry**

The European Union has banned all U.S. poultry imports since 1997 because of the use of chlorine as a post-slaughter pathogen-reduction treatment on raw poultry carcasses. This has effectively denied market access to the entire EU-28 market for U.S. poultry. The use of hyper-chlorinated water as an anti-microbial treatment is the standard practice in the majority of U.S. poultry slaughter establishments, and is considered by U.S. regulators (in particular USDA Food Safety and Inspection Service) to be safe and efficacious.

The European Union is, in theory, a very attractive potential market for U.S. poultry, with a population of more than 520 million consumers, and a relatively high standard of living. We estimate that the EU-28 market for U.S. poultry could approach \$600 million annually if the U.S. could gain access. In 2009-2013, EU-28 poultry imports averaged at 608,670 metric tons valued at \$2.2 billion in CIF value (see table 2). Assuming the shipping and insurance cost is 20 percent of export value (a conservative assumption), this amounts to over \$1.8 billion in FOB value. The U.S. only needs to capture one third of the market share of \$1.8 billion to get \$600 million.

**Table 2.** EU-28 Poultry External Imports (Quantity in MT, value in million US\$)

	2009	2010	2011	2012	2013
Quantity	639,342	606,098	625,681	626,452	545,778
Value	2,041	2,028	2,390	2,237	2,086

**Source.** Eurostat (via the Global Trade Atlas)

Unfortunately, during the past 18 years, the U.S. government has been less than successful in having the European Union begin to provide for fair market access for U.S. poultry. Even though the EU Scientific Advisory Committee approved alternative antimicrobials to chlorine as being safe and efficacious in reducing pathogens on raw poultry, the European Food Safety Authority and European Council have completely hindered U.S. poultry efforts to regain market access.

### India's Protectionism in Poultry Trade

India is a very protectionist country in terms of poultry trade. For decades, India has denied access to poultry imports from all suppliers, including the U.S. The primary trade barrier that India has employed since 2006 has been its ban on imports from any country that has reported any incident of avian influenza (AI), regardless of pathogenicity. India, meanwhile, has had numerous outbreaks of highly pathogenic avian influenza (HPAI).

Under the guise of protecting its domestic poultry industry from low pathogenic avian influenza (LPAI), India imposed a ban on U.S. poultry imports in 2007 after a finding of LPAI in the United States, but produced no scientific evidence to support the ban's validity. In response, under World Trade Organization (WTO) rules, the Office of the U.S. Trade Representative (USTR) initiated consultations in March 2012, refuting India's claims that LPAI will mutate into a highly pathogenic form of the virus. As the consultations were unsuccessful in resolving the dispute, the U.S. requested the establishment of a panel by the WTO Dispute Settlement Body in May 2012. Not surprisingly, the WTO found that India's AI measures were inconsistent with the relevant articles of the WTO's sanitary and phytosanitary (SPS) agreement. WTO announced its ruling against India in its ban on U.S. poultry products on October 14, 2014. However, the ruling does not give the U.S. automatic access to the Indian market.

The potential market for poultry in India is huge. India has a population of about 1.22 billion in 2013, with Hinduism, the largest religious group in the country, accounting for about 80 percent of the population. Beef and pork are basically avoided by Hindus and Muslims, respectively, for religious reasons (Seetharaman 2013). Per capita poultry consumption in India is currently less than 3.0 kilograms, while India's National Institute of Nutrition recommends a per capita consumption of 10 kilograms. Per capita real GDP in India, which grew at an average annual rate of 6.3 percent in the past decade ending in 2013, is predicted to continue increasing at an average annual rate of 6.1 percent throughout the next decade.

We believe that if India were to open its market and to apply international rules fairly, the United States could compete effectively and successfully in the market. The current India market for poultry is about 3.4 million metric tons annually, with an average annual growth rate of about 8.5 percent in the past decade ending in 2013. Quick-service restaurants and modern supermarkets are rapidly expanding in India, and imported U.S. poultry is an attractive supply option for many

of these new food outlets. U.S. poultry exports to India could exceed \$300 million annually if India were to open its market.

## **Anti-Dumping Cases against U.S. Poultry Products**

### *South Africa Anti-Dumping Case*

The South African Poultry Association petitioned the government of South Africa to launch an anti-dumping (AD) investigation against U.S. bone-in chicken cuts in November 1999, and the government imposed punitive AD duties a year later retroactive to July 5, 2000, for a period of five years. Every five years since, South Africa has renewed its prohibitive AD duties.

The International Trade Administration Commission of South Africa (ITAC) initiated the first sunset review in September 2005, which the Supreme Court of Appeal of South Africa ruled as invalid, as the date was more than five years after the imposition of the provisional AD duties. However, ITAC simply disregarded it and renewed the AD duties in October 2006 for another five years.

For the second sunset review launched in June 2011, USAPEEC provided a substantial amount of information to ITAC that clearly showed that U.S. chicken products were fairly priced and not dumped in South Africa. However, ITAC extended and even increased the AD duties in April 2012 for another five years.

Not surprisingly, the petitioners have failed to achieve their objective of limiting poultry imports. In fact, chicken imports into South Africa have increased rapidly since the anti-dumping case was initiated. Specifically, South Africa's chicken imports increased from 63,560 metric tons in 2001 to 354,728 metric tons in 2013, an average annual increase of 15.4 percent, according to South Africa's official import statistics. The AD case has simply diverted South Africa's chicken imports from the United States to other exporting countries, particularly Brazil. U.S. share in South Africa chicken imports decreased from 53.9 percent (average in 1996-1999) to 1.3 percent (average in 2001-2013), while Brazilian share increased from 8.2 percent to 65.8 percent (Global Trade Atlas database).

Although the U.S. industry mounted an aggressive (and ultimately unsuccessful) defense, the U.S. government chose not to challenge South Africa on the case in the WTO, which helped fuel three subsequent AD cases against U.S. chicken.

### *Ukraine Anti-Dumping Case*

Ukraine initiated an AD case against imports of both U.S. and Brazilian broiler in March 2009, at the request of three Ukrainian companies. USAPEEC and 17 U.S. companies registered as interested parties in the subsequent investigation. For Brazil, 15 Brazilian companies and the Brazilian Chicken Producers and Exporters Association (ABEF) registered as interested parties.

Because of the large number of registered parties, Ukraine decided to use sampling method in the AD investigation. However, Ukraine provided no sampling results within the specified time-

frame. As a result, most companies decided not to answer the lengthy and complicated questionnaire without knowing the sampling results, or chose not to pursue the case further.

USAPEEC fully cooperated throughout the AD investigation process in answering the investigators' questions and requests for information. USAPEEC submitted a commentary on the petition, including a specific data analysis on the case. USAPEEC also submitted a commentary on the petition jointly with ABEF. After a hearing in October 2009, USAPEEC and ABEF submitted a post-hearing brief in November 2009. In July 2010, USAPEEC and U.S. Embassy officials in Kiev, Ukraine, met with relevant Ukrainian officials to urge termination of the AD investigations. The discussions were very productive, and consequently Ukraine took into account USAPEEC's arguments and rescinded the anti-dumping case in October 2010.

### *Chinese Anti-Dumping Case*

China launched anti-dumping and countervailing duty (AD/CVD) investigations against U.S. broiler products in September 2009. As in Ukraine, a large number of companies registered as interested parties. The Ministry of Commerce of the People's Republic of China (MOFCOM) announced the sampling results. Three companies were selected in the sample to answer AD/CVD questionnaires.

USAPEEC made every effort to fight the case and provided clear evidence that U.S. broiler products had not been dumped, and demonstrated that the Chinese chicken industry suffered no injury from U.S. chicken imports. USAPEEC also argued that the Chinese methodology in calculating the dumping margins was seriously flawed and the AD proceeding did not comply with WTO rules. USAPEEC's proposal for a price undertaking agreement for the suspension of the investigations received strong support from U.S. government, as well as from the China Customs, the Chinese poultry industry, and even the petitioner (China Animal Agriculture Association). Unfortunately, in its quest for resolving unrelated political issues, MOFCOM rejected the proposal.

China imposed preliminary AD duties and CVD duties in February and April 2010, respectively. Then the final AD and CVD duties became effective for five years beginning in September and August 2010, respectively. The AD duties ranged from 50.3 percent for one of the selected three companies to 105.4 percent for non-participants in the investigation, while CVD rates ranged from 4.0 percent to 30.3 percent.

The U.S. government took the dispute to the WTO in September 2011. After consultations proved unsuccessful, the WTO established a Dispute Settlement Panel in January 2012 upon the request of the U.S. Trade Representative's Office. Not surprisingly, in September 2013 the WTO ruled the case in favor of the United States, finding that China violated numerous WTO obligations in conducting its investigations and imposing AD/CVD duties on chicken imports from the United States. However, so far China still has not yet eliminated the restrictive AD/CVD duties.

China has been one of the most important export markets for U.S. broiler products. U.S. broiler exports to China averaged 711,306 metric tons in 2007-2009, accounting for an average of 20.6

percent of U.S. broiler exports worldwide. By comparison, U.S. broiler exports to China in the past four years from 2010-2013 averaged 180,461 metric tons, down 74.6 percent from the average export amount in 2007-2009 (USDA Foreign Agricultural Service's Global Agricultural Trade System). The potential market for broiler meat in China is huge, partly because of its low per capita consumption, large and upwardly mobile population, and rapid increase in consumer income.

The severity of the impact of AD/CVD case on U.S. broiler exports is straightforward. This is particularly true for U.S. exports of chicken paws, as China is the leading export market, and alternative foreign markets are quite limited. Prior to the AD/CVD case, U.S. shipments of chicken paws to China accounted for more than 80 percent of U.S. total chicken paw exports worldwide.

### *Mexican Anti-Dumping Case*

In February 2011, Mexico became the third country to initiate an AD investigation against imports of U.S. poultry, specifically chicken leg quarters and all other leg products. This case is based on the same principles as China and South Africa AD cases. The U.S. industry, the Mexican Poultry Producers Association (UNA), and many public officials in Mexico were surprised by the initiation of the AD investigation, as the U.S. and Mexican poultry industries have a long history of cooperation on various issues. UNA has remained neutral throughout the investigation process.

In January 2012, the Mexican government announced its preliminary determination, with AD margins ranging from 62.9 percent to 129.77 percent. However, Mexican officials elected not to impose these dumping duties until they had rendered a final determination. In the final determination published in August 2012, Mexico identified and applied the rule of implementing the lowest AD duty set at 25.27 percent for the four selected companies that provided sufficient information for calculating individual margins. All other registered companies, along with those companies that did not participate in the AD investigation, would receive "all others" margin set at 127.5 percent.

Subsequently, Mexico chose to suspend the punitive AD duties on U.S. imports to avoid adding to the rising cost of staple foods in Mexico, as the outbreak of highly pathogenic avian influenza in the country in June 2012 already caused price distortions in the Mexican market. So far, the suspension is still in place.

Meanwhile, the U.S. industry – through USAPEEC – has appealed Mexico's initial finding in the case to a dispute panel established under provisions of the North American Free Trade Agreement (NAFTA). Taking the appeal to a NAFTA panel rather than to the WTO means that a decision can be rendered much more quickly. Also, the industry can initiate a request for the formation of a NAFTA panel, while a WTO appeal would require the government to pursue the case.

U.S. broiler exports to Mexico have increased rapidly since 2007, thanks to full implementation of NAFTA, which allows all U.S. poultry products enter Mexico duty free and without quota

limitation. While Mexican broiler production has increased constantly over the years since the implementation of NAFTA in January 1994, domestic demand has increased at a faster pace. In particular, the Mexican meat processing industry has expanded production of value-added products such as sausage and deli meats, using U.S. chicken and turkey meat as raw material.

With the decline in exports to Russia and China, Mexico has been the top export market for U.S. broiler meat since 2010. U.S. broiler shipments to Mexico averaged 523,694 metric tons in 2010-2013, accounting for 14.8 percent of U.S. broiler exports worldwide. Since 2012, Mexico has become the first single market to account for more than \$1 billion in combined exports of U.S. chicken and turkey meat, according to U.S. official export statistics.

## **Russian Ban on U.S. Poultry Products**

In retaliation to the economic sanctions imposed on Russia by the West over the situation in Ukraine, Russia banned imports of agricultural products, including poultry, from the U.S., the EU, and several other countries on August 9, 2014.

The impact of the ban on U.S. poultry exports worldwide has been limited, however. Russia, which was once the dominant market for U.S. poultry exports, is no longer as important. Also, global demand for poultry remains strong, lessening the effect of the sudden loss of a single export market. While Russia has remained the third-largest export market for U.S. chicken in recent years, it has accounted for only about 7 percent of U.S. total chicken exports. This compares to as much as 40 percent in the mid-1990s.

With chicken production in Russia increasing at an average annual growth of 19.6 percent in 2000- 2009, Russia dramatically cut its tariff-rate quotas (TRQs) for poultry imports beginning in 2009 to further boost its domestic industry. In 2013, chicken production in Russia surpassed 3.0 MMT, as compared to less than 0.5 MMT in 1995 (USDA Foreign Agricultural Service's PSD database). As its domestic poultry industry has expanded, Russia has become less important as an export market in recent years.

Meanwhile, the diversification effort by the U.S. poultry industry, which USAPEEC has championed for years, has helped U.S. poultry exports to continue to thrive despite multiple setbacks. Russia's 1996 ban of U.S. poultry planted the seeds for market diversification. The ban was a wake-up call for the industry, as prices for chicken leg quarters - the major poultry item exported to Russia, dropped by half virtually overnight. So many products were left on the market that some producers resorted to sending leg quarters to be rendered into pet food (Toby 2014).

Now U.S. poultry exports have become more diversified than before. For example, in 1994, the U.S. shipped 1.31 million metric tons (MMT) of broiler meat to 80 export markets, 72.6 percent of which went to the top five export markets. By contrast, in 2013, U.S. shippers exported 3.63 MMT of broiler products to 118 countries and regions, with the top five markets accounting for 43.4 percent of the total.



## Impact of AI on U.S. Poultry Exports

### *Impact of AI Occurred in the U.S.*

U.S. poultry producers raise their chickens and turkeys in covered structures with controlled access, and biosecurity practices have been a part of raising poultry in the United States for decades. In fact, the United States is one of the few countries in the world that have comprehensive and vigorous programs to prevent, control, and eradicate AI in poultry and, more importantly, prevent AI from becoming a problem to the human population.

However, incidents of low pathogenic avian influenza (LPAI) do occur sometimes in U.S. domestic poultry flocks. As LPAI poses no threat to human health, guidelines established by the World Organization for Animal Health (OIE) recommend that poultry trade should not be restricted on basis of LPAI. Under OIE guidelines, detections of AI viruses of the subtypes H5 and H7 are considered to be “notifiable,” regardless of whether they are low pathogenic or highly pathogenic, and that a country is obligated to notify the OIE in the event of any such occurrence of these subtypes.

Some countries (e.g. China, Japan, Philippines, and Russia), however, do not observe OIE guidelines regarding notifiable LPAI to the letter, and impose import restrictions on countries that report findings or detections of LPAI, regardless of severity. The U.S. government and industry agree that import restrictions based on LPAI are excessive, are not in keeping with the spirit of OIE and its guidelines, and are essentially employed as trade barriers.

In February 2004, an outbreak of HPAI (H5N2) virus was reported in a flock of 7,000 chickens in south-central Texas. At that time, this was the first outbreak of HPAI in the United States in 20 years. No transmission of HPAI (H5N2) virus to humans was reported (U.S. Centers for Disease Control and Prevention).

As a precaution and in response to an HPAI (H5N2) outbreak in British Columbia, Canada in November 2014, USDA began enhanced surveillance of poultry premises and of wild bird mortality events along the U.S.-Canadian border. Since December 2014, USDA has confirmed several cases of HPAI (H5) in the Pacific, Central, and Mississippi flyways (or migratory bird paths). The virus has been detected in wild birds, as well as in a few backyard and some commercial poultry flocks. No human cases of these HPAI H5 viruses have occurred in the United States, Canada, or internationally (USDA Animal and Plant Health Inspection Service).

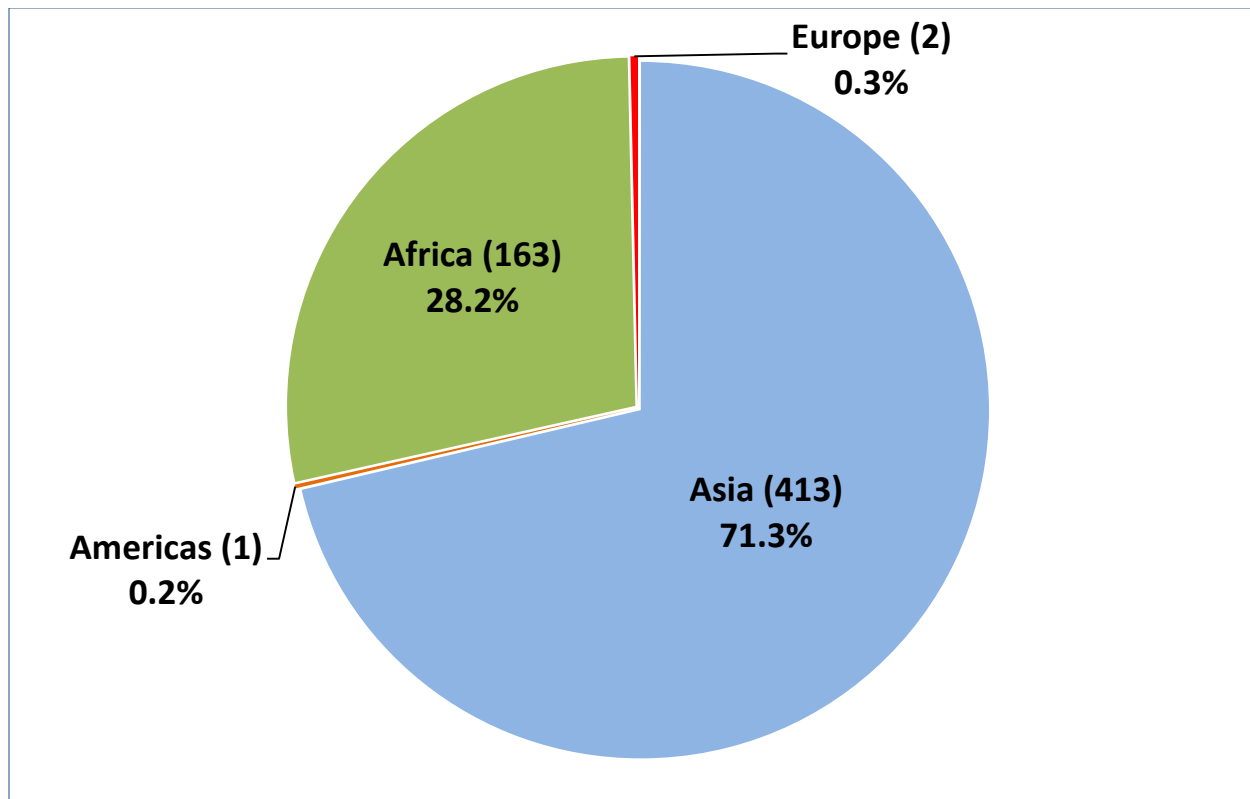
As of May 8, 2015, 132 HPAI detections on commercial poultry flocks had been reported in eight states, including Arkansas, California, Iowa, Minnesota, Missouri, North Dakota, South Dakota, and Wisconsin. More than 25 million commercial egg-laying hens and approximately 6 million turkeys were culled by state and federal animal health agencies in an attempt to control the spread of the virus, and to ensure that no meat or eggs from the infected flocks entered the food chain.

As a result of the outbreaks, more than 40 countries have imposed restrictions on U.S. poultry and egg products, including breeding stocks and hatching eggs. Although most of these countries

have limited their import restrictions to the affected states or to the affected counties within those states, a few countries including China, South Korea, and South Africa have imposed bans on all imports of poultry, eggs and related products from the entire United States.

#### *Impact of AI Occurred in Foreign Countries*

In Asia and Africa, the prevalence of subsistence farming of backyard poultry and the inability of governments to implement appropriate control measures could spell a major production disaster. As shown in Figure 2, HPAI outbreaks occur primarily in Asian and African countries. There were 579 HPAI outbreaks worldwide in the past 12 months ending on October 17, 2014. Of those, 71.3 percent or 413 outbreaks occurred in Asia, and 28.2 percent or 163 outbreaks were in Africa. The only case reported in North America occurred in Canada on January 1, 2014. The two cases in Europe occurred in two different locations in Russia on September 1, 2014. During the same period, all 343 LPAI outbreaks occurred in Asia.



**Figure 2.** Global HPAI outbreaks by region in the last 12 months (as of October 17, 2014)

**Source.** FAO/ EMPRES Global Animal Disease Information System

It is straightforward that AI outbreaks negatively affect commercial poultry production in the AI-stricken countries, as a portion of the poultry flocks either die from the disease, or must be destroyed in order to control the outbreaks. For example, the AI outbreaks in Asia in late 2003 and early 2004 led to a depopulation of more than 100 million birds in the affected eight countries of Cambodia, China, Indonesia, Japan, Laos, South Korea, Thailand, and Vietnam (U.S. Centers for Disease Control and Prevention). Chicken production in Thailand and Vietnam

in 2004 decreased by 32.8 and 15.3 percent from a year earlier, respectively, as a result of the outbreaks (USDA Foreign Agricultural Service's PSD database).

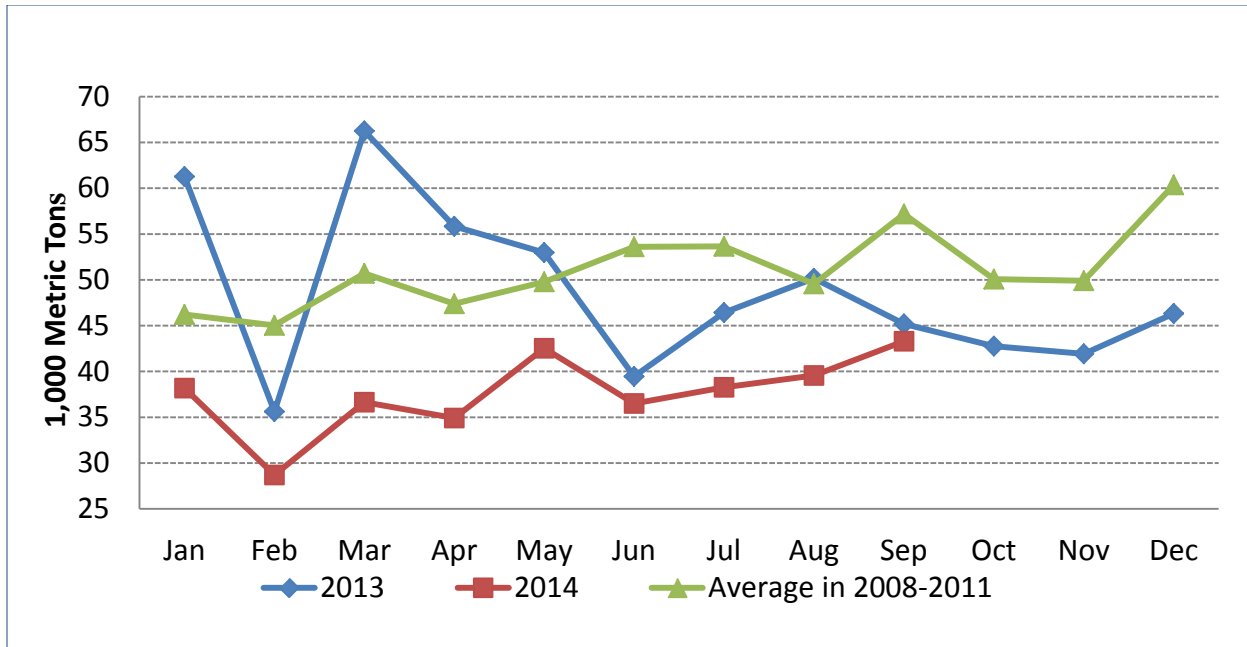
Poultry consumption in countries with AI outbreaks also tends to decrease during the outbreaks and to remain at low levels for a few months afterward, as some consumers reduce their consumption of poultry out of fear of contracting influenza, or stop eating poultry altogether. However, the decrease in consumption generally tends to be less than the decrease in production. Impact on consumption for imported poultry products tends to be less significant than that for domestically produced poultry products. The negative impact on international poultry exports prices tends to be temporary (Taha 2007). And the impact on import demand for U.S. poultry products varies significantly across the countries, depending on consumers' risk perceptions in the AI-stricken countries.

For example, the HPAI outbreaks in Mexico in June 2012 led to a significant depopulation of the poultry flocks in the country, while Mexico's domestic demand for poultry products remained strong. Even as Mexico increased imports of breeding stock and hatching eggs from the United States to help expand its poultry production, domestic poultry supply still further lagged behind domestic demand. As a result, U.S. poultry exports to Mexico in the second half of 2012 reached 408,350 metric tons, an increase of 21.5 percent over the same period a year earlier. This compares to an average growth rate of 7.8 percent for the second half of year from 2000 to 2011.

Similarly, HPAI outbreaks in Mexico in January 2013 retarded Mexican poultry production, while Mexican domestic consumption continued to increase. As a result, U.S. poultry exports to Mexico in 2013 jumped to 859,024 metric tons, an increase of 11.8 percent from 2012. This compares an average annual growth rate of 8.3 percent in 2000 -2011.

For China, HPAI outbreaks occur almost every year. Yet the HPAI outbreaks in March 2013 received much attention and media coverage, as the H7N9 virus infected both birds and humans. Most of the cases of human infection reported exposure to live poultry or potentially contaminated environments, especially the live bird markets. Most patients infected with H7N9 became severely ill and 21 people died in the three weeks since the infection in humans were found for the first time (China - WHO Joint Mission, 2013). Many consumers in China lose their appetite for poultry in response to the deadly HPAI outbreaks.

As a result, China's poultry imports dropped significantly in the following three months in succession after the outbreaks in March 2013 (Figure 3). Specifically, China's poultry imports in March 2013 were 66,246 metric tons, while imports in June 2013 were 39,460 metric tons, down 26.4 percent from the average poultry import amount of 53,605 metric tons for the month of June in 2008-2012. However, China's poultry imports began to pick up again after June 2013. Total poultry imports in 2013 reached 584,174 metric tons, up 12.0 percent from 2012.



**Figure 3.** China Poultry Imports (frozen products only)

Source. China Customs (via the Global Trade Atlas)

### Religious and Cultural Trade Barriers

Religious and cultural trade barriers are often encountered in predominantly Muslim countries. For example, entry to Malaysia, Indonesia, and Saudi Arabia must meet halal requirements, meaning poultry should be raised, slaughtered, and processed in accordance with Islamic rites. However, definitions, interpretations, and regulations of halal vary widely from country to country in both print and practice.

Total population in the Muslim countries is predicted to increase from 1.64 billion in 2013 to 2.14 billion in 2030, an average annual growth of 1.6 percent. This compared to an average annual growth of 0.8 percent for non-Muslim countries. That is, population in Muslim countries by 2030 will account for more than 25 percent of world total population (FAOSTAT). Increased population in the Muslim countries will favor poultry consumption.

In the past decade ending in 2013, U.S. poultry exports to Muslim countries increased from 233,995 metric tons in 2004 to 630,873 metric tons in 2013, an average annual growth of 11.7 percent. Of which, about 60 percent of the exports were shipped to the top five Muslim countries, including Iraq, United Arab Emirates, Kazakhstan, Jordan, and Saudi Arabia. Currently, about 14 percent of U.S. total poultry exports are shipped to Muslim countries. By contrast, 43 percent of Brazilian poultry exports are destined for Muslim countries.

## **Export Competition with Brazil**

The U.S. and Brazil have dominated global exports in both broiler and turkey in the world market. The U.S. is the single most important turkey exporter in the world, with an export market share of more than 46 percent in recent years, while Brazilian export share in the world market is about 24 percent. The U.S. is expected to continue to dominate the world turkey market in the future.

For broiler exports, the two countries do not compete head-to-head in the world market as they sell differentiated chicken products. The majority of U.S. broiler exports are chicken leg quarters and other chicken leg meat. By contrast, the majority of Brazilian broiler exports are deboned chicken breast meat, further processed chicken products, and small whole birds.

Brazilian poultry exports benefit from Brazil's AI-free status. Brazilian packaging and greater flexibility by their government (reissuing export certificates for changes in consignees) are highly regarded by importers. Brazil will continue to dominate the Japanese market because Japanese consumers prefer labor-intensive boneless items and specialized cuts. The U.S. is less competitive in the Japanese market as labor cost in the U.S. is much higher than that in Brazil. For the EU market, the U.S. cannot compete with Brazil simply because that EU has banned U.S. poultry since 1997, as discussed earlier.

The overall competitiveness of U.S. poultry exports in the world market is strong as the U.S. has a relatively low-cost and high-quality feed supply, good bio-security practices, and consistent and stable government regulations. The impact of of Brazilian competition on U.S. exports in the near future is expected to be manageable due to a separation in key export markets for the two major exporting countries along with increasing world demand for more affordable chicken products.

## **Conclusions**

This study explores key factors that affect U.S. poultry exports. Protectionism will remain one of the biggest challenges facing U.S. poultry exports in the near future. However, despite many trade obstacles, we expect a positive outlook for U.S. poultry exports in the next decade due in part to the following reasons:

First, poultry is the most efficient converter of feed, its production demands less water and energy, uses less arable land, and emits less greenhouse gases than red meat production. We expect that global poultry production and consumption will continue to increase as the importance of feed efficiency and protecting the environment become higher priorities for producing countries. Second, consumer income in developing countries will grow faster than in in developed countries throughout the next decade. Higher income in developing countries will lead to higher poultry consumption, as per capita poultry consumption in developing countries is in general much lower than that in developed countries. Third, growth in world population, in particular, increased population in Muslim countries will favor poultry consumption. In addition, urbanization and westernization of food in developing countries will help boost poultry imports. Fourth, domestic poultry consumption in most developing countries is expected to increase at a faster pace than domestic poultry production. That is, import demand for poultry by most developing countries will continue to increase in the future.

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